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Medical Technician

MARY ELLIS TURNER

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KAREN LONG

Medical Technician

BY

MARY ELLIS TURNER

JT854K

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To

GIRLS IN LABORATORIES EVERYWHERE

AND ESPECIALLY TO

VIRGINIA, ELLEN AND ELIZABETH

APR 30 1948

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KAREN LONG, MEDICAL TECHNICIAN

o o 1 o o

"HERE'S TO THE TOWN OF BALTIMORE!"

Karen Wheeler Long, member of the Senior Class of Smith College, major in Chemistry, sat down at her typewriter. "I hope my ideas clear as I write," she thought. "It's very confusing, but there never was a member of any senior class who didn't have to make up her mind about what life's to be after graduation." She looked out of the window at the dormitory across the court, where the lights were gleaming softly in the early twilight. Then resolutely, she set about composing her letter.

Dear Mother:

This has been a most exciting afternoon! Miss Black, who is acting head of the Chemistry Department while Mr. Wolfe is away, called me in and asked me if I might be interested in coming back to Smith next year as an assistant in the Department. Assistants help prepare material for teaching and experiments and have some opportunity for independent work. I was no end flattered to be asked, but, my pet, I'm rather fed up right now with college. What with all the chemistry and bacteriology I've had in these last two years, I feel I know all the tables and gas fixtures in the Science Buildings by name. I have a definite yen to move out of these circles and try some new ones. I thought I might as well see what the

Vocational Bureau had to offer in the line of positions, since the Career Problem had raised its head. I went down to Mrs. Neild's office, and just as I was going in, who should come by but Miss Genung. She's head of bacteriology, and she said she had been looking for me. It seems that she had had a letter from Dr. Johnson, of the Johns Hopkins Hospital, saying that there was an opening in her laboratory for a volunteer worker in bacteriology, and Miss Genung thought that I might be interested. Remember, Dr. Johnson spoke here last winter and we all thought that she was wonderful?

Well, it sounded thrilling! You know, I've always thought I'd like hospital work, and I should love to have an opportunity to work under someone as famous as Dr. Johnson! Thanks to your kindness, my sweet, I still have a thousand dollars of my college insurance money left, but I'm not quite sure I want to spend it to keep me while I volunteer. What do you think about it?

If you don't mind, I think I'll write Elsa a note, asking her if I may spend a week end with her during spring vacation. I'm sure she could bed me without too much trouble—she has been asking me to visit Baltimore for ages and it would give me an opportunity to go to the Johns Hopkins Hospital and talk with Dr. Johnson. If you approve, I'll ask the Vocational Bureau to send her a transcription of my record and make an appointment for me. I have no idea what the work will be like, except that it will be training in "bacteriological methods," but I think it's worth investigating. Baltimore might be fun, too, for a while. Could you bear having your only child living on the other side of the Mason and Dixon Line?

"Now," said Karen to herself as she sealed the letter, "my thoughts have cleared. I know I want to go to Baltimore to see what it's all about. If Mother finds anything wrong with the setup, she will say so. My goodness, look at the time! All the work I have to do!"

She pushed back her chair, rose and stretched: a tall, competent-looking girl, rather grave, with a forceful, good-humored face. Her eyes were large and gray and her dark hair hung to her shoulders. She wore a blue sweater above a plaid skirt. With a characteristic shrug of her shoulders, she turned again to her desk.

Days passed, bringing a note of approval from the New York State village where Mrs. Long lived and a delighted reply from Elsa, in Baltimore. Came spring vacation and a sunny morning that found Karen on her way south. From New York, across New Jersey to Philadelphia, along the Delaware River to Wilmington, sped her train. The country changed after Wilmington was left behind. The cars hurried swiftly across wide rivers that are really arms of the Chesapeake Bay. Spring had not yet touched New England, but here new grass had appeared and red maple buds were bursting from their brown coats. There were small boats and occasional wild ducks to be seen on the shining waters of the rivers. Karen was charmed by the serenity of the landscape. As a counteraction to any sentimentality, however, she heard the train wheels take up a jingle she had read in an old copy of the *Herald Tribune* and which she had not thought of for a long time.

Here's to the town of Baltimore, the home of Ogden
Nash,
Where you ride three miles in a taxicab at the cost of a
quarter, cash.

"Now, what made that pop into my head?" she
thought. "I wonder if it's true."

Shortly thereafter, the train pulled into the shabby
station and Karen and Elsa were greeting each other like
long lost friends.

"Come this way, Karen," ordered Elsa, after the first excitement was over. "We must get a cab." They jostled through crowds to the taxi stand, and Elsa noted that times had changed. The taxi rates read: *Two miles for twenty-five cents.*

They settled themselves in the taxi and Elsa directed the driver to her address on North Charles Street. Karen looked at Elsa appreciatively. Elsa was always beautiful. She was slim and willowy, with large dark eyes, a fair skin and a mass of blond curls, carefully pinned in ringlets. She was poised and self-assured. Her ability to wear clothes made her a delight to the eyes and was also instrumental in securing for her the position she now held. She had been graduated from Smith College two years before and had come to Baltimore to learn merchandising. She was doing well in the shop where she was employed and had rented an apartment overlooking the park which is the Johns Hopkins University Campus.

It seemed no time until the taxi drew up before a

stately apartment house.

"This is wonderful, Elsa," said Karen, as they rode up in the elevator. "Doorman and everything!"

Elsa laughed. "I haven't much room," she answered, "but I love the service we have. It's such a comfort to come home at night and find the place clean!"

She led the way into the apartment. It was tiny, but the rooms were beautifully furnished and as neat and artistic as Elsa herself. Karen was delighted with her surroundings and after admiring Elsa's possessions went to the window. The buildings of the University could be seen through the trees.

"Which are the Hospital buildings?" she asked.

Elsa smiled. "Not here, darling. To be perfectly frank, I've never seen them but I hear they're 'way over in the eastern part of the city, somewhere. The neighborhood there isn't very good, although many of the medical students and interns live near by. If you should take the position, you would certainly want to live in North Baltimore. Perhaps we might share an apartment. Tonight I thought we would have dinner in the dining room downstairs. Don Thomson is coming over later and he's bringing Jack Wehr for you. How tactless of me to agree to an insurance man! We should have had a medical student for you!"

They went dancing that night. Karen's date was a tall lean boy with black hair and astonishingly blue eyes. He learned of Karen's appointment and offered to conduct her to the Hospital in the morning.

"You will have trouble enough finding your way through those corridors after I get you to the entrance," he said. "It's a maze, really, and I know that people must wander around for years before they find their way out. At least I can get you to the main entrance, although what will happen to you then, I haven't the slightest idea."

The following morning, after a quick breakfast and the closing up of the day bed in Elsa's little living room, the girls made their way through the apartment house to the street, Elsa to take a bus to her shop, Karen to await Jack. She thought to herself, shivering a bit as she came through the lobby of the enormous building, "I shouldn't like living here all the time. It's too big and too impersonal. There must be somewhere else to live."

Jack's little car drew up to the curb and they started across town. Although Karen had read and heard about the brick row houses and the white steps of Baltimore, still it was fascinating actually to see them stretching on, square after square.

As they turned the corner from North Avenue into North Broadway, Jack said, "You can see the buildings of the Hopkins group on the hill. Pretty, through the haze, aren't they?"

Karen appreciated the soft colors of the varied roofs ahead and noted how the silhouette of the larger dome etched itself against the sky, but she could not restrain her astonishment as the main building of the unit came in sight. "It looks like an old sanitarium!" she gasped.

Jack threw back his head and shouted. "Thought you were going to see something as beautiful as Cornell, did you? This, my child, is the well-known Johns Hopkins Hospital of Baltimore, and, as a collection of assorted architectures, it is unique. Wait till you see it in all its grandeur. It's a marvel. Go into the lobby and get directions about how to get to Dr. Johnson's office—careful directions, remember—and when you have finished with your interview, come back to this entrance and get a cab to Elsa's. You are too young to ride the "Q" bus alone. Good luck, Karen, and if you get lost in there, send me a telegram."

Karen couldn't decide how much of this conversation was serious, but she thanked him and made her way inside. There she stopped in astonishment. In a very small tiled lobby, gazing benignly down at her, was Thorvaldsen's figure of Christ, in pure white marble. It appeared to be the size of the Statue of Liberty. The great figure, with arms outstretched, faced the doorway and seemed to cast compassion on every mortal who entered the Hospital doors.

"My goodness," Karen thought. "Isn't that impressive?" Her practical nature finally asserted itself after a long awed pause. "But how did they ever get a statue as large as this in here? They must have built the place around Him."

She tore her eyes away from the figure and noted a desk on the right labeled, *Information*. The young lady there gave her explicit directions as to how to find Dr.

Johnson's laboratory, but her instructions did not fill Karen with great confidence. She obediently ducked behind the stairway, however, and shortly found herself in a long corridor. It ran perpendicular to the door through which she had entered and seemed endlessly long. She turned left. People of all ages, all sizes, clad in all types of uniform were milling about. Men and girls in white, girls in blue, people in city clothes, groups of Negroes, orderlies with stretchers, nurses' aides pushing wheel chairs: life seemed to be flowing helter-skelter.

Two further inquiries led Karen to the building called the James Buchanan Brady Urological Institute. In the entrance corridor, she passed by a portrait of an extremely stout gentleman with the most remarkable collection of diamonds for waistcoat buttons. Later she learned that this was a painting of famous "Diamond Jim" Brady, who, because of gratitude for relief brought him by urological surgery, had presented funds to endow the Institute that bears his name.

A cheerful elevator boy took her to the sixth floor and directed her to walk up the remaining flight. She was obviously going into a garret. At the top of the stairs were rooms opening on either side, but, remembering the elevator boy's admonitions, she walked to the end of the hall, where a large laboratory appeared before her. To the left was scientific equipment; to the right, desks and animal cages. It was terrifying. She swallowed desperately to keep her stomach from climbing out of her mouth.

From behind a filing case, a short woman in a white coat emerged. She had a mass of dark hair that stood up in all directions, and wide gray eyes with lines of laughter about them. She said, pleasantly, "Good morning! Are you Miss Long? Miss Johnson will be here in a few minutes. Suppose you come into her office. My name is Marie O'Hara."

Karen felt slightly more at ease as she was led into a small room on the left. She scarcely had time to glance at the stacks of books, periodicals and papers scattered everywhere, when a cheery whistle was heard in the hall, and a big woman, with the most jovial expression in the world, bustled in.

"Miss Long? I am Helen Johnson. Miss Genung writes that you might be interested in doing some volunteer work with us. She says, however, that you know nothing about our system, and thought that I should explain it to you carefully. From your college record and the remarks Miss Genung has made about you," she added, smiling, "you apparently think clearly and want to get the best possible training you can for yourself."

A look into her keen gray eyes and Karen forgot to be afraid. "Thank you very much, Dr. Johnson," she said. "I'm pretty much in a quandary as to what I want to do, and I am sure this interview can help me decide."

"We take a volunteer worker into our laboratory every year," explained Dr. Johnson. "She helps Miss O'Hara with the routine hospital tests that are made here. There are in the Hospital many specialized laboratories,

of which ours is but one. We study, to the exclusion of almost everything else, bacteria found in urine, and although our field may seem a small one, still we have enough varied material to give a beginner a good general background in bacteriology. Should you come here, you will study the organisms that are the cause of tuberculosis, those that infect the intestinal tract, the different types of streptococci and various other types of bacteria that invade the human body. An intelligent girl who is interested in bacteriology and biological chemistry can learn a great deal in a year. In addition to the laboratory work, you will have time, if you are interested, to take a course a semester at the Medical School or at the School of Hygiene. You will be expected to attend lectures and to make use of the library. In fact, in your quest for knowledge, you will be restricted only by your own limitations.

"Our girls are well trained. There are always positions open for them or opportunities for graduate study. In the last few years, schools for training medical technicians have been opened in connection with some medical schools and hospitals, but we want our girls to be more than technicians—we want them to learn to think freely and independently. The training that the girls receive here is an excellent foundation for medical research.

"I must tell you, however, that hospital positions, in general, are underpaid, and the salary attached to your first position will probably be inadequate. If you hope to make a large salary, don't work in a hospital. I invariably warn the girls I interview, but I always seem to find en-

thusiasts who want to do this type of work." She chuckled, but was immediately serious. "One other point. Should you decide to join our group, I must ask that you spend nine months, at least, with us. Should an attractive position open up after that time, and we are not shorthanded, I shall not stand in your way. But you can see how we may be handicapped in our tasks if we must stop in the middle of the year to train a new technician."

Karen was impressed and showed it, as she leaned forward with keen interest. "How soon would you want me to come, Dr. Johnson?"

"We should like you the first of July. The first of June Miss Clark, who has been with us the past year, is going to Dr. Phair at the School of Hygiene for work on some meningococcus studies. We can get along without a volunteer in June, when work is slack. Miss O'Hara leaves for her vacation the middle of August, and you can learn much of the routine in six weeks. Some of it may be a bore, but if you like bacteriology, I am sure that you will find plenty to interest you. Now suppose I turn you over to Miss O'Hara and Miss Clark. They will show you the work they are doing. They do it all—I just putter around." With another jovial laugh, Dr. Johnson terminated the interview, and took Karen into the big laboratory.

"Miss O'Hara is my right-hand man whom I take the liberty of calling Maggie," she explained. "Maggie, can you and Sue show Miss Long the works? I'm sorry, but I have an appointment downstairs. Look us over and see

how you like our setup, Miss Long, and if you are interested, we shall be delighted to have you with us. Goodbye and good luck!" With a hearty handshake, she was off. "If anyone wants me, I'm in Dr. Colston's office and will be back in half an hour!" Her voice echoed down the hall.

"Miss Long," said Miss O'Hara, "this is Miss Clark, soon to be our ex-volunteer." She smiled affectionately at the small girl beside her. Sue Clark looked very young. She had a piquant oval face, rather dark skin and closely set dark eyes. Her hair was almost black. She gave an impression of wiry strength, combined with an active intelligence that belied her youthful appearance.

Sue grinned in friendly fashion, but Karen turned shy. Miss O'Hara noted her embarrassment. "Take a look through my microscope, Miss Long," she said. "The slide there shows beautiful streptococcus chains. Pasteur called them 'chaplet germs.' They would make chaplets, but the way they look now, I think the wearer might be strangled. There are so many chains of them!"

"What a beautiful microscope, Miss O'Hara," said Karen, still shy. "I've never used such a complicated one."

"Adjust it, here," said Sue, deftly shifting the stage. "When you are accustomed to it, you will love it."

Karen saw the streptococci hanging in blue chains, and noted how beautiful they were under the fine magnification. Miss O'Hara showed her cultures of growing bacteria, and introduced Karen to the guinea pigs, rabbits,

and mice, explaining the various procedures for which their use was so important. Karen was fascinated as much by the congeniality of Miss O'Hara and Sue as by the evidences of interesting studies.

"Sue," said Miss O'Hara, after a time, "why don't you and Miss Long skip over to Leo's for a coke? She probably has questions she would like to ask you about life among the bacteria. I will watch your experiment and turn off the autoclave."

"I had better go on across town, then," said Karen. "Thank you so much, Miss O'Hara, and I hope, if everything turns out as it should, that I can come to work with you the first of July."

"We should like very much to have you, Miss Long," returned Miss O'Hara. "We shall miss Sue, although we're delighted that she is going to work with Dr. Phair. It's a fine opportunity for her."

Good-byes were said, and the girls left the laboratory. Sue completely bewildered Karen by taking her through another corridor and very quickly into the street.

"I walked miles when I came in here," said Karen.

"Everyone walks too far until he knows his way about," answered Sue. "But if you work here, you learn very soon to conserve steps. If you haven't saddle shoes or moccasins of some kind, these floors are wearisome after a few hours. Even with comfortable shoes, one begins to be foot-conscious in the late afternoon."

They went across the street into a lunchroom that was filled with people, apparently all connected in one way

or another with the Hospital.

"So many people," said Karen, softly. "Do you mind my calling you 'Sue'? I can't ask you all I want to, and still call you 'Miss Clark.' "

"Not at all," Sue answered. "Miss O. and I were so pleased when Miss Johnson told us Miss Karen Long was coming for an interview. We thought that was a lovely name, and anyone carrying it would certainly be an asset."

"I hope I can be," said Karen, gratefully. "Why do you call Dr. Johnson 'Miss'?"

"She prefers it, usually. She's a Doctor of Science, not of Medicine, and lots of women with doctorates prefer 'Miss.' Slightly more feminine, I think. We always call her 'Miss' in the lab, and most of the girls call Miss O'Hara 'Miss O.' They are both swell."

"They seemed nice."

The girls ordered their cokes and sat down at a small table.

"Please tell me something about the work volunteers do, Sue," continued Karen.

"Each lab is different," began Sue, "and there are a great many of them here that have volunteers doing what we call 'technical work'—which means, actually, chemical or bacteriological tests, the pattern of which has been pretty well established. Techniques are constantly changing, however, and everyone has to be on the lookout for new methods, no matter in what medical field you are. And a package of cheese crackers." She smiled at the

waitress who had brought their Coca-Colas.

"Where was I? Oh, new methods! Well, many scientists, now, are investigating the uses of the 'sulfa' drugs, as we call the sulfonamides, and ever since I've been at Brady, Miss Johnson or Miss O. have made changes in their methods, because the use of the drugs has simplified some problems and created new ones. Those ladies certainly make me jump every time I begin to feel a little smug! And I get that way!" she said, rather ruefully. "Have a cheese cracker!"

Karen took one. She liked watching the changes in Sue's small face.

"I began last summer," Sue continued, "doing elementary jobs in the lab and after I had been working for two months and had developed a little self-confidence, Miss O. gave me simple problems to solve about the cultures we were making every day—things she wanted to know, but hadn't time to do herself. She made me go to the library and read the current literature. I shall never forget the time I found something in one of the standard textbooks that was not correct. I was shocked, but Miss O. just laughed and said: 'Sue, the people who wrote this book are humans, just as we are; and they make errors, just as we do!' How about another coke? Are you in a hurry?"

"Not terribly. But don't you have to get back?"

"We'll make it a 'quickie'! Waitress, may we have two more?"

"Go on, Sue," begged Karen.

"Well, one day Miss Johnson came down the hall with a very pleasant-looking gentleman, and Miss O. was amused because he was the author of the chapter in the book in which I'd found the error!"

Karen was much impressed.

"Miss Johnson is wonderful," Sue went on. "She has a marvelous sense of humor and she can get herself involved in many interests. She has more energy than two or three other people put together. It's really a privilege to know anyone as vital as she is. Everyone is devoted to her. Miss O. keeps the routine work going efficiently and doesn't attempt any research. She attends to as much of the administrative detail as possible, which gives Miss Johnson much more time for her studies. If Miss O. doesn't need assistance, sometimes you are permitted to help Miss Johnson with her experiments. That's fun, too. Also, you have contacts with work that girls are doing in other labs. There are meetings every month of all the lab groups, and we often ask help from other departments. They are as specialized in their fields as we are in ours. I've loved every minute of it."

"It sounds fascinating," said Karen, "and both Dr. Johnson and Miss O'Hara are people with whom I'd like to be associated. They have trained quite a few workers, haven't they?"

"Yes. Girls who have volunteered here have gone to laboratories all over the country. Of course, a lot of them marry, but many of these continue their scientific work

or come back to it after they have raised their families. I think Miss Johnson and Miss O'Hara are both good teachers."

"Do you wear white coats all the time, Sue?"

"Most of the time. Sometimes in summer we wear thin white uniforms. There is a shop up the street that makes them."

"I think I should love the laboratory," said Karen, thoughtfully, "if I can afford it. Sue, where do you stay and how much does it cost you to live in Baltimore?"

"I board with my aunt, across town," answered Sue, "so it isn't expensive for me. Carfare every day adds up. I took a German course last winter at the University night school because many scientific articles are written in German and my translations were awful. That had to be paid for. There are many ways around the Hospital of earning a little money, however; it isn't too bad. There are all sorts of places to live, here or across town, depending on what you can afford. And it's so much fun! None of the interns or technicians have any money to speak of. We have a wonderful time together! I know that the secretary in the Medical School will be able to make some suggestions when you decide whether you want to board or have an apartment, and where."

"I think I am going to come, Sue, but I shall have to discuss it with Mother before I am sure."

"I know," returned Sue. "I was feeling the same way about it at this time last year, but my mother was eager

to have me spend some time in Baltimore. She was born here, and has always maintained that there is no city like it. I love it, too, and I should hate to leave. I feel that I have learned a lot, in the past year, although I may change my mind when I begin to work under a new 'boss.' I can see how green I was when I came here last summer and how stimulating Miss Johnson and Miss O. have been. It won't be easy to say good-bye to Brady Seven."

She picked up the checks. "Did I say the second coke was to be a 'quickie'? Miss O. will think I've taken the day off. I must get back to the lab. Please decide to come to Baltimore, Karen," she added. "I know you will like it. Let me know if I can help you in any way."

The girls parted, and Karen, casting about for a taxi-cab, saw a "Q" bus coming toward her. "I'll show Jack that I can find my way about," she decided, remembering the slur on her age.

Inquiring her way from the motorman, she found it easy to swing swiftly across to Charles Street in the "Q" bus and then to transfer to the "A" bus. She never forgot her first bus ride north on Charles Street, past lovely Mount Vernon Place and through the shabby districts near the station and North Avenue. Farther on, when the beautiful park came into view on the left, green with the first suggestion of spring, she thought to herself, "I like Baltimore."

In honor of Karen, Elsa took the afternoon off, and came home at two. She looked the well-groomed and successful business woman. She listened intently as Karen

recounted the events of the morning. "Elsa, I should love to go into that lab," ended Karen.

"Do you really want to go over there for a year and do volunteer work, Karen?"

"I should love it. After talking with Dr. Johnson and the people who work with her, I don't want to do anything else."

"But the courses you've taken—the chemistry and bacteriology! It seems to me that someone should begin paying you for all the specialization you've done. Karen, let me try to get you a job in the shop. Then you could go to night school, if you wanted, but you would be earning something."

"Elsa, you know I'd be a sight in your fancy shop! And, honestly, the setup in Dr. Johnson's lab is marvelous. The atmosphere is entirely different from our school labs, and it's impressive! Everyone is so interested in what she is doing that it's thrilling. I can take a course a semester at the Medical School, too, or at the School of Hygiene, and get credit toward a degree in graduate work. Of course, I must discuss it with Mother, but I'm sure it's what I want to do!" Karen was enthusiastic.

"Well, I still think you are foolish to volunteer when you might be earning your own living, or at least some money, but far be it from me to discourage an earnest young thing like you. Let's lunch!" And the girls sauntered out to the drugstore.

That night a special delivery letter went on its way to Mrs. Long.

Dearest Mother:

I saw Dr. Johnson this morning. She is even more wonderful in her own lab than she was at Smith. She advises me to come into the laboratory as a volunteer worker for a year. She says that my basic training is good but that I will need experience either for a position or as foundation for any graduate work I may contemplate. It is possible, of course, to get such training in technical schools, but Dr. Johnson suggests that while I am learning laboratory routine, I can take courses at the University that will count toward a graduate degree. I had a long talk this morning with Sue Clark, the present volunteer worker. She is taking a position in another laboratory the first of June and she is thoroughly convinced as to the value of the past year's training to her.

Does it sound sensible to you? I'm definitely sold on the whole proposition. Anyone would be, after talking to Dr. Johnson for half an hour. She is so vivid and so alive, and the people who work about her seem to reflect these very qualities. I haven't worked out the financial end of it, but the technicians seem to live quite simply, and I know that even those who are earning make small salaries. I'm sure I can live on my own money—the only thing extra that I might need would be for tuition fees. Would you care too much if I didn't earn anything for another year? Elsa thinks I've lost my mind. Have I?

Elsa and Karen had a most enjoyable holiday together, and after seeing the Patapsco River, Sunday, from the ramparts of Fort McHenry, Karen was thoroughly in love with the old city.

She took the night train to Northampton, and her mother's answer was waiting for her.

I was delighted to receive your letter, dear. By all means, stick to your decision. You know I never regarded the years you spent in college as preparation for just salary. They were preparation for the years ahead when you would be living with yourself. They gave you time to assimilate as much learning as you were able and to learn where to find more when you were ready for it. Your studies have given you a background. You are well-trained in fundamentals, as Dr. Johnson said, and you are ready for advanced training in more specialized subjects. Now go on and see what you can do for yourself.

Part of your insurance money was saved for just this type of emergency. Next summer you must plan your budget carefully. If you should need more money, I shall be glad to help you, but I want you to plan intelligently so that you may put what you have to the best possible use. The financial training will be as much of an asset to you as your bacteriological work. I shall be watching with great interest, but as far as I am concerned, it's hands off unless you need me.

So Karen, rather startled at her momentous decision, wrote an acceptance to Dr. Johnson and made plans to begin her career as medical technician.

2

AND HOW WE LIVE

The last college days sped by. Education had been fun for Karen. There had been a great many subjects to learn about, but the required course in biology had thrilled her and the vistas opening up to her in chemistry and bacteriology had been very exciting. Knowing now that she was going to continue the work she loved, she applied herself to her tasks joyfully.

Graduation, with its attendant excitement, was soon over. Bidding Smith a rather wistful good-bye, Karen left for Yorkville. There would be two weeks' vacation before her career began.

Karen's father had died when she was a child, leaving Karen and her mother with resources adequate for comfortable living in a small town. Her mother possessed an active mind and a remarkable amount of energy. She loved Yorkville, but was not more than casually interested in the social patterns followed by the average dweller in a village. After Karen's early education had been established, her mother set out on a successful career as a writer of radio script, which had, in turn, aroused her interest in radio transmission. The field of radio, however, took care of only part of the creative energy

hat flowed from her, and she had recently begun to riginate designs for linoleum. She was a great stimulus o Karen. There was a deep affection between mother nd daughter. Although they had diverse interests, each ad sincere sympathy for the other's point of view and espect for the other's intelligence.

"Karen, what are you planning about clothes for Balti- nore?" asked her mother, after a few days had been spent n swimming parties and dancing. "What do you have o wear in the laboratory?"

"White coats," replied Karen, "and you buy them cross the street from the Hospital."

"But you have to wear something under them. Can ou wear socks? Will you go without stockings or will ou wear black lisle ones, like the student nurses?"

"I think I shall begin with socks. Sue said to be sure I ad comfortable shoes, too."

"Well, my child, you had better wend your way to Hoppers and lay in a supply of inexpensive, easily laun- ered seersuckers and cottons. I have always heard that altimore is the hottest city in—"

"Elsa says that isn't right," Karen protested loyally. Washington is the world's hottest city. It has more hite buildings and asphalt. You must never say Bal-ti- nore, Mother, or Mary-land. You say 'Balamurr, Meri- n.' "

"It sounds as if you were already an ardent 'Balamurr' ly." Her mother laughed. "You have those two cotton vening dresses, just in case someone should ask you to

dance, sometime. Then those two dresses you bought in Northampton, for teas. How is your white hat?"

"Terrible," replied Karen. "I shall have to buy another one and a new bathing suit. I had better get new shorts, too—there may be tennis, and shorts are always comfortable for lounging around, hot Sundays. By the way, does this come out of my budget, or yours? When is your baby released from the maternal apron string?"

"She was released years ago, but the string had bound her so lightly that she didn't know it," returned her mother in sentimental mood. "You've been rather a satisfactory child—at least the best I ever had—and as reward for merit you may charge what you need to me. I will also pay for a new coat, to be purchased in August. Only if that design isn't in the mail tonight, I won't be able to pay even the income tax!"

"Mother, you are a very pleasant person to know. When I become a famous bacteriologist, like Dr. Johnson, I will shout to the world that I owe it all to a linoleum designer! Or would you rather be hailed as the author of the Crystal Soap Series? You are so versatile, darling. Will you come to Baltimore next month to cheer me on my way?"

"My sweet, I very much doubt it. My lines of endeavor, such as they are, are best pursued in Yorkville. Unless it is a matter of necessity, I shall stay put. All this Commencement flurry has broken my stride, and I think that one Long had better keep the home fires burning and finish her contracts! However," relenting as she saw

nadow on Karen's face, "perhaps in the fall I can come. ou have painted glowing pictures of your future associ-tes, and if you are still as fond of them by autumn, I nall have to come down to meet everybody! I have never en the Hospital and your description of the lobby is ost intriguing."

"It's quite an institution," said Karen. "But please romise you will come later. I want you to know these eople, although I haven't lived with you all these years ithout learning how you value your seclusion. Any-ay, thanks for the tip about the clothes. I shall shop in ne morning."

"How is the heart beating since you have been home?"

"Definitely for Science, Mother. I've had fun, but I n eager to get to Baltimore. The boys are as nice as they an be, but the heart throbs aren't there any more."

Karen had had a bad time at Christmas, when she had st off an old flame. Her mother knew that time healed ose scars, and had been pleased to see Karen enjoying erself during this last holiday.

The few days following were spent in shopping, and cleaning and mending old summer frocks. Elsa's im-ortunities for sharing an apartment in North Baltimore ere weighed and found wanting. Karen had determined live near the Hospital.

She went off to Baltimore a day early with just a suit-se, planning to find a room before having her trunk nt.

She trudged up the steps from the train that morning

in late June, very much alone, yet aware of a definit happiness in finding herself in Baltimore again. She fe as if the city welcomed her. She had planned to spend th night with Elsa, but a new and refreshing independenc asserted itself and she decided to go to the Hospit neighborhood first and look for her boarding house. SH checked her bag, emerged from the station, and feelin like an old inhabitant, hailed a south-bound bus. Wit much artfully concealed self-consciousness, she boarde the bus and asked for a transfer. The bus rumbled on, an Karen recognized landmarks she had noted on that mo mentous day in April. The trees were green now i Mount Vernon Place, and there was that charming colo of shabby bricks and the stateliness of the Washingto Monument, looming so high above the narrow stree Tears came to her eyes as the bus rolled through th Square. "I love this city," she said to herself, "and I don know why. I've never been so happy!"

She recognized the transfer point, and as she climbe into the "Q" bus was hailed by no other than Sue Clar "Karen! I'm so glad to see you! Everyone is delighte that you decided to come to Brady! But you're early You aren't due till tomorrow."

"What fun to meet you, Sue! I came down a day ahea of time to find a room. I'm going to the Medical Scho for information, just as you suggested. You are lookin fine and tanned! How do you like your new job an when do you have time to get so brown?"

"As to the first—it's fun, but I have to inject chicken

nd I can honestly say they will never be the friends that abbits and guinea pigs are. Mice, any day, and rats; but nickens, no! As to the tan, I spent the week end sailing Annapolis. Do you like semi-salt water? There are two chools of thought about Chesapeake Bay. I always hate o show my enthusiasm, if I think it will be greeted coldly y a fresh water addict."

"I've never been on the Bay, but I think I like all kinds f water," answered Karen. "At least, I like fresh and lt, so I should like—what did you call it, semi-salt?"

"You see, we are a long way from the ocean, but the ay is still tidewater. You must come sailing with us, oon. Let me know when you are settled. I intend to ome to Brady Seven for lunch, at least once a week, anyay, but you have no idea how isolated we become in nese labs. We grow more and more absorbed in our ork, and it's really a job to get away. You must come o see my lab as soon as you know the trails around the rady hideaway."

The girls parted at the corner, Sue to go to her lab nd Karen to go to the Medical School.

The dingy Medical School buildings seemed to be lyg in a heap behind an impressive white Renaissance alace that Karen later learned was the Welch Medical ibrary. She asked her way from a bespectacled young an who was obviously a student, and after devious anderings, found the Registrar's Office. A young lady ere gave her a list of rooming houses and a few pointers out directions and streets. Karen started down Monu-

ment Street to North Broadway.

As she passed the bookshop, an attractive girl in a blu dress came hurrying out of the door. She was of mediu height, with soft light hair curling to her shoulders. SH had a fresh, wholesome face and the pleasantest smile i the world.

"Excuse me," she said. "But aren't you Karen Long I'm Sara Jane Smith, and I work in the Allergy Clinic i the Hospital. I met Sue Clark a few minutes ago and tol her that two of us were looking for a third girl to shar an apartment. She said she had sent you to the Registrar Office for a list of rooms, and for me to watch for you— you might be interested in joining Mary Wells and me Mary works in the Dispensary and she is a swell perso Sue said you were planning to room alone. I had a roo by myself last year and nearly went insane. You get fe up with eating around and with not having a place t have dates. Mary has just come here from Iowa, and sh says she's willing to try apartment life, but we have t have a third. You sounded nice, and please don't min my asking you. A room gets so boring, and, really, wit three in the apartment, we can live quite cheaply."

This whirlwind attack completely nonplussed Kare "I don't know what to say. I thought it would be cheap to live by myself. You are awfully nice to ask me, but don't think I could afford it. You see, I'm just a voluntee and I have to watch my budget carefully."

Sara Jane laughed. "Whether you are a volunteer o on salary, you have to watch the budget around her

don't want to convince you against your will, but I
now that living in an apartment with two other people
ill be cheaper than living alone. Food is such a problem!
nave three furnished apartments on my list—come meet
lary! If you don't like us, or what we see, you can still
ok over your own listings this morning. We aren't go-
g to find the Ritz on Broadway, but let's see what it has
offer. Mary said she could stop in about fifteen min-
es, if I had any luck in contacting you. Let's go to her
inic and see if she's free."

Sara Jane was so charming and her friendliness so con-
gious that Karen's idea of living quarters took a sudden
mersault. "I'd love to," she declared.

"Oh, swell!" and the girls sauntered across the sunny
reet to the Hospital. The entrance to the Dispensary
uilding was new to Karen, and again she encountered
ong corridor. Although she had never been in this par-
ular section of the Hospital before, the bustle and the
rieties of people there tied in with her first impressions.
e was fascinated by the crowds and she loved the at-
osphere.

The girls rode in the elevator to the second floor, and
aren was newly impressed by the different activities
at were going on in this great Hospital. Many rooms
ened from the corridor and she caught glimpses of men
d women in white coats working with various patients
d with many types of equipment. Under a sign marked
ETABOLISM they stopped, and at that moment a tall girl
th a beautiful shock of curly auburn hair slammed a

door indignantly and almost ran into them.

"Oh, Sara Jane, I am sorry! I didn't mean to knoc you down!"

"Calm yourself, Mary. This is Karen Long. She i coming with us to look at apartments. What's the mat ter? You look all hot and bothered!"

"I am mad! I could have killed that dumb little thin that just went out of here! She had an appointment fo a basal and I couldn't get anything like a normal readin on the machine. I went down on my knees and spen half an hour practically tearing the machine apart an then she yawned and said she was out till four o'cloc this morning and had a little hangover! The direction for this test say specifically that the patient must hav eight hours' sleep and no liquids after nine o'clock. Ca you imagine wasting the time of the clinic like that? O well, let's skip it!" Her mood changed quickly and sh was all smiles.

Karen felt suddenly at a loss. It seemed impossible tha she should ever be as nonchalant about her duties as Mar Wells was.

As the girls emerged from the Hospital and walke down Broadway, Karen learned that Mary Wells ha gone to the State University out in Iowa for two yea and then had taken a three years' technical course a the University in St. Louis. This had given her trainin in handling complicated equipment used in the moder Hospital.

Sara Jane Smith came from Western Maryland, an

ad been graduated from Goucher College in Baltimore. he was working for her Doctor of Science degree in ie School of Hygiene, as well as making patch tests in ie Allergy Clinic.

They were both attractive, capable and interesting, and aren was very happy to be with them.

Sara Jane, list in hand, stopped at one of the white-epped brick houses and rang the bell.

"Yes, I have two furnished apartments for Hospital eople," said the landlady. "Would you care to see them? here is one thing I might mention, however. Since I ve in this house, I have made it a point that girls may ot entertain their friends after twelve o'clock at night. think that that is late enough for any caller."

Sara Jane was firm. "I'm sorry, then, but we shall have look elsewhere. I lived under orders of that kind for ur years in college, and when I have an apartment, I ink that it should be my decision as to what time my iests leave."

"The very idea!" she fumed as they walked on down e street. "Are we infants-in-arms or are we not? I'm ot contemplating any wild orgies, but it's the principle the thing. Renting an apartment with a clause like that tached to it! Hooey! Here's the second address. Let's e what restrictions they have."

"Look," said Mary. "There's an outside stairway and e apartments open from it!"

"That's a point," noted Karen.

The girls applied at a tailor shop, located on the first

floor, for the apartment and were taken upstairs by a ver polite gentleman named Mr. Gasser. Mr. Gasser was ver bald but he compensated by a three days' growth c beard.

"This is nice," whispered Mary. "We would have ou own outside entrance and wouldn't bother anyone. Tw flights aren't bad and we are on the top floor."

Mr. Gasser showed them a small third-floor apartmen made over many years before. The living room had southern exposure and the bedroom, both southern an eastern, while off the tiny kitchen, at the western end o the apartment, was a miniature porch, overlooking th picturesque alleys and shacks of East Baltimore. Besid the kitchen was an adequate bathroom, practically fille by an ancient tub. The bedroom faced Broadway an contained two beds and a large cot, besides a dresser an a chest. The living room had the requisite "living roo suite" and a small table, bookcase and two lamps. Th kitchen, with stove and icebox practically in each other' arms, would admit a cook, but no butler. The furnitur was worn, but the place was clean, and the plain wall paper and bare floors had possibilities.

Mr. Gasser went below to answer a bell.

"Forty dollars a month. What do you think, gals? Sara Jane asked. "Three into four goes once; well, sa fourteen dollars a person. No electric icebox, but ther is an A & P in the next square, and when we want to b fancy, the market's on the other side of the Hospital. W shall have to take turns in the kitchen and probably pre

our clothes in the bedroom, but the little porch is grand, and cross ventilation is something that most of the apartments lack. I don't know anyone around here with a nicer apartment than this!"

"Let's ask Mr. Gasser to hold it for us for an hour and look at the other addresses," suggested Karen. "After all, it's only the second apartment we've looked at."

The other girls agreed, and another apartment was inspected, as well as a fourth, but back they came to their first love. Nothing they had seen had had the privacy, the light and the air of #3, 510 North Broadway.

So from Elsa's cool retreat on North Charles Street that evening, Karen wrote her mother.

Having come here with the intention of rooming alone, I find I am now one of three in an apartment, and I have known my roommates for only twelve hours! We have paid our rent, and may move in anytime. Sara Jane is taking some of her things over tonight. I could use my radio, the small bookcase, and some of my prints, if it isn't too much trouble for you to send them. I hear that Sears Roebuck maintain an exclusive establishment on North Avenue, and we shall go up there after work tomorrow to shop. The apartment is unique, to say the least. Two flights up over a tailor's shop and with a vista of shacks and alleys from the porch. There are two beds, and a not too comfortable cot in the bedroom. We can alternate if the cot gets hard. Then the couch in the living room is a bed, so that if someone wants to, she can shift. This will also take care of a guest.

And tomorrow I am off to work. The very thought of it gives me goose flesh! But it's funny to see how gay these people are. You would think that they might all be very serious-minded, but they laugh and joke just as if they didn't have important responsibilities on their shoulders.

I think that having an apartment is going to be fun.

3

LIFE BEGINS

IT HAD grown warmer during the night, and when Karen oarded the bus the following morning, the passengers ooked hot. Karen, however, was having hot and cold hills totally independent of external conditions. She nounted the steps of the Hospital, hoping for the sight f a familiar face. With all the comings and goings, how-ver, there was no one she had ever seen before. Even ne elevator boy was new. The steps up to Brady Seven eemed hardly long enough, but when Dr. Johnson ex-nded a greeting in her hearty manner, Karen forgot l her foolishness and was sincerely glad to be back in ne laboratory again.

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"Tell me all about yourself, Karen," said Dr. John-on. "Have you found a place to live, and is there any-hing I can do for you?"

Karen told her about the apartment. Dr. Johnson ughed. "We didn't do that in my day," she said. "When came to Baltimore, Dr. Jennings, who was in charge f the research work here, took me to a very select board-g house, where young ladies in a wicked city were prop-ly chaperoned. That didn't appeal to me, so I arranged or my aunt to come here. She and I still live together

and she spoils me. But isn't it fun for you to begin housekeeping so soon? Don't take your work here too seriously for the next few days—get yourself oriented and it will be much pleasanter for you. You must come and have dinner with my aunt and me very soon. Now let's see if we can help Maggie. Then we can take a turn downstairs and I shall introduce you to some of the other members of the staff."

Miss O'Hara, in the big lab, welcomed Karen, but assured Dr. Johnson that she didn't need help at the moment, so Karen was taken on a tour of inspection.

"It's always frightfully hot here in the summer," said Dr. Johnson. "Dr. Young, who is the head of the Brady Clinic, has promised us air-conditioning. The order has been placed, but materials are hard to get, and I suppose it won't be installed before Christmas."

They walked down the hall and entered a smaller room containing much glassware. At a table in the center sat two women making cotton stoppers for glass tubes.

"Karen, I want you to know Delia and Pearl. They prepare the media in which our bacteria grow and attend to the cleaning and sterilization of all our glassware. Delia concocts a variety of plain and fancy foods for our 'bugs,' depending upon their needs. You probably won't realize the artistry involved in cleaning large quantities of glassware, of stoppering hundreds of glass tubes and flasks, of making an infinite number of cotton swabs, of compounding a variety of media, and of the sterilization of all these things until you find yourself in a situation

where you have to do it yourself. During the last war was working with a Public Health Unit near one of the arge camps and media were supplied to us. Later, I went o the Near East with the Smith College Unit: no elec-icity, no gas, no running water, and no incubator, but lenty of dirt. Except for a portable army kit I took with ne, the only supplies we had were brought in on camels!"

"How did you carry on your work?" exclaimed Karen.

"Well, it was hard to fight typhus and malaria and dys-ntery with so few supplies. I'm afraid we weren't always s scientific as we had been taught to be. Listening for amel bells became automatic."

"But I didn't mean to go into all that," she continued. This is the Brady chemical laboratory," entering the oor next to the media room, "presided over by Dr. But-r, who doesn't like summer heat and is languishing in Maine. His next in command, Janet Stevens, is here. anet," she called, and a bright-looking girl emerged rom yet another room. "This is Karen Long, Janet. anet was also a volunteer in bacteriology, but her first ve was chemistry, so when the chemistry department eeded an assistant, we gave them Janet, with our bless-g. She is doing work on sex hormones, which are ex-reted by the body through the urine. She does the tech-cal work of extracting the substances from the urine f the patient and computes data that are later analyzed y Dr. Howard, a specialist in this field. He evaluates her sults in the light of the clinical information he has re-

garding the patient. She also does other routine work. When patients are taking sulfonamide drugs, she can determine by chemical tests the amount of drug present in the blood. That gives the doctor an indication as to whether the patient is assimilating sufficient drug to fight his infection or whether he has too much drug in his body. These compounds may be dangerous if the doses are not watched carefully; so Janet's readings of the current drug levels are of great importance. I want you to learn this technique, Karen," she went on, "for when Janet is on her vacation, you may have to substitute in the chemical laboratory. The chemical training you had in college will help you. Let's go below. I want you to meet Dr. Young and the members of his staff."

As they went down in the elevator, Dr. Johnson explained that the sixth floor housed the interns and resident doctor of the urological staff; the fifth and fourth, private patients; the third, semi-private patients; and the second, ward patients.

"We also have a certain number of beds allotted to us in the Negroes Surgical Ward," she said, "and our clinicians see patients in other parts of the Hospital. For special studies they prefer to have their patients on the urological service, however, and it is easier if the patients stay in the Brady Building. They come from all over the world," she continued. "Dr. Young is a famous surgeon, and there are certain types of rare cases about which he knows more than anyone in his profession. He has trained a great many men who have specialized in urology. He

is a delightful person to know, too, and he will appreciate the sparkle in your eye."

The elevator took them to the floor below the street floor. Karen found this a different world. A short corridor to traverse this time, with treatment rooms on one side, and a laboratory and X-ray rooms on the other. Karen was introduced to the nurse in charge, and to several physicians who were on Dr. Young's staff. At the end of the hall they met a courteous and friendly girl who was Dr. Young's secretary.

"Miss Trott," said Dr. Johnson, "could Dr. Young see us for a few minutes? I want Miss Long, our new volunteer, to meet him."

"I'm sure he'll see you, Dr. Johnson," said Miss Trott, nodding pleasantly to Karen. "He's just about to go to the operating room."

At that moment, one of the most distinguished-looking men that Karen had ever seen walked into Miss Trott's office. He was of medium stature, but his short white coat and whiter hair gave him an appearance of height. His eyes, behind nose glasses, were keen; his features handsome and clear-cut. When he spoke to Karen, she was fascinated at once by his manner and by the beautifully modulated tones of his voice.

"We are delighted to have you with Dr. Johnson, Miss Long," he said. "You know, we call Brady Seven the Brady Heaven because of all the charming ladies we have there. Dr. Johnson always picks her staff for beauty, as well as for intelligence, and she has made an exception-

ally successful selection this time. I am sure you will enjoy working here." With a smile he was off down the hall, followed by four or five younger men, also in white coats.

"Isn't he nice?" chuckled Dr. Johnson. "He is so deeply appreciative of feminine charm, he always sets us up."

Karen met several other people who greeted her cordially. She was shown the urological dispensary, where the out-patients are treated. Mr. Didusch, the medical artist, showed her some of his exquisite drawings of the anatomy and anomaly of the genito-urinary tract (G. U. to the initiates). He also promised to show her one of the colored moving pictures of Dr. Young's operations.

"Mr. Didusch is a great artist," said Dr. Johnson, as they descended still another flight of stairs. "He developed the art of taking pictures of an operation while it is being performed. His moving pictures have revolutionized the teaching of urology. He uses different types and sizes of lenses at different stages in the operation, and has studied the lighting effects so carefully that he has beautiful results. Before Bill's movies were used in teaching, the student could only look over the surgeon's shoulder at what was going on, and that wasn't very elucidating."

In the basement they called on Mr. Engel, who made the instruments Dr. Young used. They visited Freddie, the boy who fed the animals and kept their cages clean.

"We can keep the smaller animals we use for experimental purposes in the lab," explained Dr. Johnson, "but

there is room here to take care of any larger ones we may need. See what comfortable cages we have, and how clean Freddie keeps everything. No animal is ever neglected or mistreated. Some of them are giving their lives for us, every day. For their help in advancing medical knowledge, we owe them more than we shall ever be able to repay, no matter how kind we are to them."

"Let's go to the lab, now, Karen. There are many things I should like to show you, but there will be another time." On the way back, Dr. Johnson told Karen of "Diamond Jim" and his generous gift that had made the Institute a reality.

They walked down the corridor to the big lab, and found Miss O'Hara pounding away at a typewriter. Dr. Johnson showed Karen the two desks that were to be hers; one for her bacteriological work and one where she might write and keep her records. Karen was also given filing cards for references, and two bacteriological needles for handling the minute organisms. One needle had a loop on the end, and the other was straight.

"We always use platinum wire," said Dr. Johnson, "because platinum is most pliable and cools quickest. Speed and care are the secrets of good bacteriological technique.

"I shall let you get acquainted with Miss O'Hara now, Karen, and when I go to the library this afternoon, I should like you to go with me. I can show you how to use the catalogue properly. Are you sure you are all right? I must leave you, for I have much to do."

"How did you like your grand tour?" questioned Miss O'Hara.

"I'm overwhelmed! I've met so many people, Miss O'Hara," answered Karen. "What amazes me most is the number employed on specialized subjects, just in this Institute! And Brady specializes on a particular section of the body! I suppose that specialization of this kind occurs in every unit in the Hospital, doesn't it?"

"Yes," answered Miss O'Hara. "And each specialty seems constantly to evolve new complications. Judging by Hospital standards, country practitioners make many omissions, for they can't possibly perform the delicate tests made in the laboratories of large institutions. Yet, sometimes I suppose the diagnostician may be confused by the wealth of material that is presented to him. It must take considerable skill to weed out the unimportant facts. Relax for a while, Karen, and then I shall go over some work with you. I won't attempt to talk about routine until you've had a breathing spell. Otherwise, you won't remember a thing."

Karen was touched by her thoughtfulness. "You and Dr. Johnson are very kind," she said, leaning back in the big chair that seemed designed for such "breathing spells."

It was the first time that she had looked carefully around the laboratory. She confessed to herself that she had expected more white cabinets and more shiny chromium. The only white objects in the room were a huge electric icebox and two sinks. There were two incuba-

tors: large wooden boxes mounted on stands and used to incubate cultures of bacteria. One of them was obviously homemade, and both showed signs of years of usage. The work tables and desks were nondescript, but three fine microscopes on the microscopy table and the modern typewriter seemed to bring the room up to date. There were rows of guinea pig cages, each cage containing a small inhabitant happily munching cabbage. The head of a beautiful white rabbit looked over the top of a pen in the corner. On the walls were two striking French posters, souvenirs of some voyager's holiday; an etching of Pasteur with his fermentation tubes, and a formidable steel engraving of Leonardo da Vinci. There were several photographs of contemporaries and a calendar or two, but the room had a general air of neatness and was, on the whole, pleasing. One small fan was battling mightily with the heat that poured through the roof.

Miss O'Hara finished her work at the typewriter and began to arrange the sheets she had typed. Her hands were strong and capable. Karen went over to watch her.

"Every morning," Miss O'Hara told her, "we report the results of the tests made the day before. If the patient is in the Hospital, the report must be entered on his chart. If he is being seen in the free clinic, or comes into Brady for daily treatments, the report is placed with the notes dictated by the doctor in charge of his case. There is a tremendous amount of clerical work performed in a Hospital, and sometimes I thing this bacteriologist is turning

into a stenographer! I see more black keys than bacteria when the reports are long!"

They went over to Miss O'Hara's work table. There were a dozen flat covered plates, made of glass, lying on the top. Karen knew they were called "Petri dishes" and contained culture media.

"Of course, from your college work, you know about planting infected material on agar plates," Miss O'Hara continued, picking up a Petri dish. "Look at this." She held the neat transparent glass to the light. "You can see two or three types of bacterial colonies growing here. Colon bacilli, staphylococci and streptococci are commonly found in infections of the urinary tract. The types of organisms must be studied and identified. This information helps the doctor establish the diagnosis and treat the patient. Cultures are made at intervals to find out whether or not the treatment given the patient is efficacious. The results of the culture may show the infection is persisting. If that is so, the doctor must know it, because he may want to change to another type of therapy. On the other hand, if the culture is sterile, it usually means that the infection has responded and the patient is well. During the next few months you will be learning to grow these organisms on suitable media and to identify the various types we meet."

"It was different in college," said Karen. "We never thought of our studies as having practical application, although of course we were told they had."

"Yes, it is different," agreed Miss O'Hara. "One can't

realize the importance of such things until one has had some practical experience with them. I have made some smears of infected material," she continued, pointing to a number of slides that lay on a table beside a sink. "Suppose, while I am on rounds, you stain them with Gram stain. Then look at them with the oil immersion lens of the microscope. You will find directions for the type of Gram stain that we use in the little red book over there, and the reagents used are in those drop bottles in the rack. Put on one of my white coats so that you won't stain your clothes. I shall be back soon."

Karen had been taught to follow directions, but when Dr. Johnson came cheerfully barging in a few minutes later, she found Karen with more stain on herself than on her slides.

"I always color myself thoroughly when I've just had a manicure and am going to a stuffy tea," she said. "If you drain your slides, I think you will have less trouble."

Karen felt very clumsy as Miss Johnson showed her how to finish her slides and then she noted with surprise what beautifully shaped hands Dr. Johnson had. The skin was soft and of a fine texture, the backs were plump, and the fingers, although not long, were beautifully proportioned. The nails were short, deeply curved, and showed good care. "They are like a poem," she thought. All year the privilege of watching Dr. Johnson's hands as she worked with her experiments gave Karen great pleasure.

Karen dried the slides and, after a few false starts, was

able to find the fields of bacteria under the oil immersion lens of the microscope. She decided that a little practice would help her technique. When Miss O'Hara returned, Karen asked her for more material to smear and stain. Later Miss O'Hara showed her how to pick colonies from the agar plates and transfer them to other media, where the type of growth observed would be a step in the organism's identification.

The morning passed quickly. Dr. Johnson suggested that, since it was Karen's first day, they lunch at the tearoom across the street. "We lunch here in the lab, customarily," she said, "because it saves time. You may plan to lunch with us, if you like. I think it wise, however, for you to lunch outside with your friends, sometimes, for we are rather isolated on Brady Seven. You will become better acquainted with the Hospital personnel if you join some of the other young people at intervals."

White coats were shed, hair combed and lipstick applied. Janet emerged from her lair and off they went to lunch. The tearoom was cool and filled with animated groups of people, all of them apparently employed in the Hospital. Chatter and smoke filled the air. Karen enjoyed watching the expressions on the various faces as voices rose and fell. She was introduced to many people whose names she did not remember but who looked interesting and alert. After lunch Miss O'Hara and Janet returned to Brady Seven, and Dr. Johnson and Karen strolled around to the library.

The Welch Medical Library is an edifice of great dig-

nity, and Karen was properly impressed as they entered its shadowy portals. Dr. Johnson stopped in the lobby and showed Karen the bust of Dr. Welch, to whom the library stands as a loving tribute.

" 'Popsy' was a delightful person to know, as well as a great teacher," she said. "He had a perfect figure for a Santa Claus. He was supposed to be unbeatable at microscopic diagnosis. One day the students thought they would trip him. They put a piece of banana on a slide, placed it under the lens, and asked him please to look at the 'strange fibres' they had found. 'Popsy' studied the preparation intently and said, finally: 'Very strange, yes. I have seen a preparation similar to this only once before and it was: banana fibres!' "

Karen was amazed to learn that "Popsy" always ate four or five desserts. She wanted more stories.

"There are fascinating tales about the men who were first associated with the Medical School," said Dr. Johnson. "If that type of literature appeals to you, read Dr. Cushing's *Life of Osler*, or Dr. MacCallum's story of Dr. Halsted. I have them in my office."

They ascended broad steps and went into the Great Hall to admire Sargeant's fine painting of Dr. Welch, Dr. Osler, Dr. Halsted and Dr. Kelly, the famous "first faculty" of the Hopkins Medical School. The portrait was perfect in its setting.

"How wonderful to have it here, instead of in a museum!" said Karen. "It is hung in an ideal location."

"Yes," said Dr. Johnson. "Before the Welch Library

was opened, the painting hung in back of a door in a dark corner of the Library at Homewood. The north wall of this room was designed as a background. Look," she said, "how shadowy Dr. Halsted's face is, compared to the others. The story is that Sargeant became annoyed with Dr. Halsted because he would not coöperate during the sitting, and deliberately planned that his picture should grow more shadowy as the painting grew older. It may be a myth, but I think of it always when I look at the painting, for Dr. Halsted seems to recede farther each year."

Dr. Johnson explained that the upper floor of the library housed the Department of the History of Medicine of which Dr. Sigerist was the head. She told Karen, also, of the exhibitions of rare medical books and other historical material that were frequently shown there. Then they entered the reading room, with its stacks of medical and scientific journals.

Karen's eyes opened wide as she saw the crowded shelves. "I didn't know there were so many scientific periodicals," she said. "What a lot of writing must be done! How do people find time to read all these things?"

Dr. Johnson sighed. "No one has enough time, Karen," she answered. "As a matter of fact, some of our writers could be a little less prolific and the medical profession would still be kept well informed. It is becoming a problem for libraries to collect and save the great mass of literature that is being published. The quantities of paper that must be impounded are huge, and some institutions

take microphotographs of the articles published. That will probably be tomorrow's answer to this problem, unless through some strange chance human nature loses the urge to express itself at every opportunity."

Karen was introduced to the librarians and to the Cumulative Index, the volume that lists all medical articles published during a specified time. "What a task it must be to edit this!" she thought. Dr. Johnson showed her how to go to the stacks to find the tiny cubby hole that Dr. Johnson had reserved for her own reading.

"Use this room any time you like," she said. "It is usually quieter here than in the big reading room, and certainly more comfortable." She laughed. "I say it is usually quieter; last spring a medical student was in the booth in front of mine, and he must have gone to sleep with his chair tilted back. Suddenly there was a crash that sounded like the crack of doom, and student, volume and chair hit the floor simultaneously. We all rushed out, and he was thoroughly embarrassed. I haven't seen him in here since. The only other thing we hear from time to time is the howling of the monkeys in the Hunterian Building. There are many of them living in cages on the top floor, and their discussions sometimes rival those of humans. I think that you had better go back to the lab now, and if Miss O'Hara hasn't planned anything special for you, call it a day and take up your moving."

Karen thanked her and went on back to the Hospital. Just to be independent, she entered the institution by an entrance she had not formerly used, and found that it

led finally into familiar territory. She felt quite proud of herself.

When Karen reached the laboratory, there was a message for her to call Jack Wehr at a certain number. According to Elsa, he had been out of town for the past few days.

"Is it all right if I call from this phone, Miss O'Hara?" she asked.

"Certainly," answered Miss O'Hara, from the depths of her work table. "Ask the Hospital operator to give you 'outside,' and then tell the exchange operator the number you want."

"Is there anything I can do to help you? Dr. Johnson thought that I might go early and try to get moved."

"I think that that's a fine idea, but don't do too much in this heat. You aren't accustomed to it. Take it easy for a while."

Karen called Jack and found it very pleasant to hear his voice again. "I called Elsa this morning and she said she thought you were planning to move this afternoon. I had intended to ask you to go swimming, but I'm a fine mover. Suppose you let me help you fix up the exclusive dwelling on North Broadway. Are they working you hard? What time will you be finished?"

"I can go any time, now, but I have to go across to Elsa's for my bag. It would be awfully nice to have your help, but it is hot. Are you sure you want to?"

"Absolutely!" declared Jack. "I can come over now and get you. We'll stop for some cooling refreshment

and then collect your traps. What is the closest exit to your lab? Have you discovered it?"

"I should say so," returned Karen, pertly. "I now know five exits, two of which I can reach in five minutes."

"Smart gal! Give me fifteen minutes. Which exit do you choose?"

"The Accident Door."

"That's a good one to leave by. I'll be along."

The phone rang almost immediately after Karen put down the receiver, and she felt quite businesslike as she said, "Brady Seven."

"May I please speak to Miss Karen Long?"

"Right here, Sara Jane. How did you get along last night?"

"Fine! Mary and I both spent the night at the apartment, and it was cool, really. And it's fun! Are you coming over after work?"

"I'm leaving practically immediately. Jack Wehr called and said he'd stop for me. We are going to get my bag, and his car might be a help if we have to go to Sears Roebuck."

"That's a wonderful idea. Suppose I buy some hamburger and tomatoes before I go home and we can have sandwiches for supper. Mary has to struggle with the express company and a trunk this afternoon, so I will take charge of supplies. We shall see what else we need after we get together. 'Bye."

Karen said good-bye to Miss O'Hara, washed, combed,

and lipsticked, and hurried down the stairs. What a day! She had never done so many things in so short a time and she was breathless. "If I don't Gram stain in my sleep all night," she thought, "I shall probably spend the night moving mountains."

Jack, all smiles, and slightly disheveled in his seersucker suit, arrived at the Accident Entrance just as Karen walked out of the door.

"Hi," he said, "how do you like Baltimore's heat? She's doing rather well for your benefit, but she can do better!"

"Hello, Jack! You are an angel to play chauffeur this afternoon when you might be swimming!"

"Shucks! It's just curiosity. Elsa said that you were moving into the slums, and I thought that a little slumming was what I needed. And, in the back of my mind was the thought that the slummers and the slummees might go swimming later on in the evening. How would that do? There are deep quarries, not far out of town, and the water is always cool. I'm sure that we can get a crowd together and I can think of no better way to end a moving day. How about a long luscious limeade?"

The lady was graciously pleased to accept a long luscious limeade, and was equally pleased at the "joint" where they stopped to procure it. The room was gloriously air-conditioned and the walls were covered with amusing Pickwickian murals. Refreshed, they went on to Elsa's apartment to pick up Karen's few possessions.

"What is Elsa doing this evening? Do you know?" asked Jack.

"I'm not sure, but we can leave her a note and call her later. Maybe she will want to come over and help. We shall probably end with more hands than we can use, but the more the merrier. By the way, Sara Jane said she'd buy hamburger and tomatoes for sandwiches. You and I could buy more, if you will honor us with your presence at the first dinner served in our new establishment. Perhaps Elsa will come, too. I'm excited about the apartment, and I'm glad now that I was enticed away from the one-room plan."

"Oh, it will be much nicer for you," responded Jack. "Let's stop at North Avenue Market and pick up a watermelon. Crabs would be good but rather messy for your first evening. We'll buy some limes, lemons, and a bottle of soda water and have ourselves a time. We can find a piece of ice in your neighborhood. There is a big plant on Gay Street."

Karen was thrilled by the cool beauty of the displays in North Avenue Market. After they had bought much too much of the tempting food, they returned to #3, 510 North Broadway, their arms full.

With much perspiration and more laughter, they carried their booty upstairs and into the tiny hall. Sara Jane and Mary had left the place as clean as a pin when they had gone to work. Jack bustled around, opening windows.

"Karen, this is really tops," he began. "And holy smoke, look at the view over those shacks in the alley! It's a subject for an artist. I hope that the nocturnal argu-

ments of your neighbors won't bother you, however. You know, they don't fool, in this section. Johns Hopkins was put here because the inhabitants of these alleys are known to play a little rough, particularly on Saturday nights. That's why Hopkins surgeons stitch their incisions so artistically; they have had years of experience on Saturday night carvings."

"They won't bother me until they begin carving in this room," laughed Karen, "and then I shall leave in a hurry. Mercy, what's going on out there on Broadway?"

Someone was shouting, in a not unmusical voice. Leaning out of the window, she saw a small huckster's wagon, loaded with watermelons, going slowly down the street. Walking beside the horse, chanting unintelligibly, was the driver. Karen and Jack hung over the sill.

"What's he saying?" Karen asked.

Jack laughed. "You are seeing typical Baltimore, now. He says: 'Watermelon, watermelon, red to the rind.' The colored hucksters have songs for much of their produce, although there aren't nearly as many hucksters as there were when I was small, and we don't hear as many songs. There are probably more in this section of the city, however. You will hear the 'strawberry' call in the spring, and the fish and oyster calls, too. The calls used to be longer, I think, and they are all very old. As huckster succeeds huckster, the songs are carried over with the trade. It's really a shame to let them be forgotten."

"Isn't that interesting?" said Karen. "I'm glad that I'm

living near the Hospital. It's going to be fun for more reasons than I thought."

About that time Sara Jane arrived, her arms loaded with packages. After proper introductions, Karen proudly showed her the brown paper bags piled high in the kitchen. She exclaimed with delight.

"We must have a house warming this very evening," she announced. "There isn't room in the kitchen for us and for all the food. Listen! That must be Mary!"

Voices were heard below. "Of course we can get that trunk up these stairs! I never heard of anything so silly! I can take one end and you can take the other. Now, come on! It isn't that heavy!"

"It sounds as if Mary's auburn locks were asserting themselves," said Sara Jane, giggling.

"Do you suppose she'd let me help her without being properly introduced?" asked Jack. "The steps are so narrow that we shall have to trade places on a shoestring and it's hardly the spot for a formal introduction. Suffering codfish, what a woman!" He bounded down to the rescue, for Mary's determination was equaled by her energy. The girls stood at the top of the rickety wooden stairs and laughed at the picture of a hot little Negro in his shirt sleeves, a flushed girl with auburn curls, and a chivalrous gentleman from Baltimore—all in a huddle with a well-traveled steamer trunk.

Mary relinquished her grip, ducked under Jack's arm and joined the audience. "What a time I've had!" she gasped. "Tom White is just about the slowest expressman

I have ever seen. We've been at this all afternoon and I know I have done more work than he has!"

"Out of my way, girls! We're coming through!" The trunk was heaved across the sill and borne into the bedroom.

"What are you going to do with it after it's empty?" queried Jack, speculatively.

"I don't know," answered Mary. "The only thought was to move it into the apartment."

"Why don't you ask your landlord if unused articles can be parked in the cellar? You don't want to be falling over trunks all winter, and they certainly won't go under the bed."

Sara Jane and Karen went downstairs to interview Mr. Gasser, and returned much pleased at having been allotted space in the cellar.

"Concrete?" questioned Jack. "Rats, you know."

"Concrete," stated Karen. "Clean and tidy."

At this point, Sara Jane called a conference of the occupants of #3 and disposal was made of dresser drawers and closet space. Jack stuck his head in the door.

"I have a hammer and some nails in the car," he announced, "and I am going to work on the kitchen table. There is a weakness in one leg that bodes of disaster." Whistling cheerfully, he ran down the stairs.

"Isn't he nice? He seems to be enjoying himself thoroughly," said Sara Jane. "He's an asset, Karen."

"He certainly has been a help," agreed Karen. "If we get this place under control at any reasonable hour, he

wants us to go to a quarry for a swim."

"Oh, heavenly! That will be what we need by ten o'clock tonight." Mary was halfway in her trunk. "Sara Jane, maybe Jack would get your other suitcases and you could unpack. Then Karen will have the room to herself when her trunk arrives. And we should buy some cleaning things at Sears tonight. There is a nice maid in the Dispensary who says she can clean for us, if we want her one half-day a week."

"Oh, I must call Elsa," said Karen. "Is it all right to ask her to come to supper, if she can?"

"Surely, but we must buy paper plates and knives and forks. We are furnished with only four of everything. Gracious! Will you please look at what Jack has collected? Howdy Moran and that handsome intern who is working in Osler. I've always wanted to know him."

"Excuse me, ladies. I found a couple of classmates rolling about on Broadway and corralled them. May I present Howdy Moran and the honorable William Moore, with whom I spent four years at Yale? I took the liberty of asking them up for a long luscious—you know what, Karen, but I also warned them that they would probably be put to work."

"Jack, we have only four glasses!"

"What hospitality! We need a little organization here. How about the shopping trip?"

Lists were made to include cleaning tools and glasses.

"Oh, and an ironing board!" added Sara Jane. "And a big frying pan! This one is overcrowded when it fries

two eggs."

The boys were most coöperative and declared their willingness to help. Sorties were conducted. Jack deposited Karen and Howdy at Sears; Mary and Bill at the dime store; and took Sara Jane to her room to collect four suitcases.

Karen slipped away for a moment to call Elsa.

"Elsa, could you come over and have supper with us? We are having a wonderful time moving in, and we are going swimming later this evening. Call a cab and come along!"

"I'd love to, Karen. I have a date this evening, but he could meet us, couldn't he? I shall be over as soon as I have a bath. What's the number, again?"

An hour or two later, supper was in full force and the old apartment was sparkling with fun. "Isn't this a swell way to open our house?" said Karen to Sara Jane, as they were powdering their noses. "Are you tired?"

"Completely exhausted. Won't the water feel marvelous?"

And it did. About one o'clock, considerably rested and completely happy, the girls settled down on their clean sheets and called it a day.

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FIRST TECHNIQUES

In spite of heat and strange noises, it took the alarm clock's sonorous voice to arouse the occupants of #3 the following morning, but after a few sighs and yawns they were soon attending to the various duties of their housekeeping.

"How can we best divide labor?" asked Sara Jane. "One can cook and market for a week, one can straighten and dust—what about the third?"

"Oh, miscellaneous jobs," suggested Karen, cheerfully. "Emptying the icebox pan, washing dishes, collecting and sorting laundry—and with all of us being away during the day, there will probably be errands to the cleaners, and stuff. Let's jot down any bright ideas we have as to the running of the apartment."

"Sara Jane, don't you think Mary's ideas of having a maid clean once a week is a good one? It will cost only a dollar."

"I think it's fine. You can give her your key, can't you, Mary? Since she is in your department, you can talk with her about anything special we want her to do."

"Very well," said Mary. "Her name is Eliza—you know her, don't you, Sara Jane? She's been in the Dispensary for years."

"Oh, yes, I remember her. She's a good maid."

"Let's get going," said Karen, impatiently. "I can't wait to see if the 'bugs' Miss O'Hara had me inoculate into tubes yesterday are growing."

There were other groups of girls walking toward the Hospital and Karen was introduced to Mary McLane, who worked in the autopsy room, to Clara Jordan, who volunteered for Miss Zepp in the Harriet Lane Home for Children, and to Norma Cloud who was the blood-bank technician.

As the girls entered the Hospital, Karen said: "I'm coming around soon to call on everyone. I want to know if your jobs are as interesting and as important as I'm expecting mine to be!"

Then began an absurd argument as each stood up for her particular specialty, but, as was to be expected, no one convinced anyone else. They parted merrily in the corridor. Karen strolled through the Brady entrance, and as she passed the portrait of "Diamond Jim" she smiled at him. His diamonds as well as his eyes seemed to twinkle back at her.

The elevator boy greeted her with a blithe "good morning" that established her as a member of the staff. Delia and her assistant, Pearl, were dusting the laboratory when Karen entered. "Good Morning, Miss Long," said Delia.

"Good morning! Am I the first to arrive? I wonder if there is anything I can do to help Miss O'Hara."

"She always reads her plates, first thing," suggested

Delia, shyly.

"Fine! Perhaps if I study them before she comes, I can think of some intelligent questions to ask her. Thank you, Delia."

Karen went to the big oak incubator, opened the doors and brought out about a dozen Petri dishes. She barely had time to look them over, when Dr. Johnson's cheery whistle was heard in the hall. A minute later, she and Miss O'Hara came into the lab.

After greetings and a few remarks about the "early bird," Dr. Johnson disappeared into her "inner sanctum," from whence statements addressed to no one in particular could be heard issuing from time to time.

Miss O'Hara and Karen went over the cultures. There were plates to be examined and colonies to be "fished." Smears were made of some of the bacteria and, after having been stained, were studied under the microscope. Miss O'Hara explained at length the characteristics of the organisms growing on the Petri dishes, and gave Karen several plates for particular study.

"What are these flasks, Miss O'Hara?" asked Karen, "They seem to have blood in them."

"We call them 'blood cultures,' Karen," answered Miss O'Hara, "but that is a laboratory colloquialism. When the patient is suspected of having bacteria in his bloodstream, blood is drawn from the vein and placed immediately in a flask containing broth medium provided for that purpose. The intern brings the flask to the laboratory and we plate small amounts of the 'blood

medium,' much in the same way that we plate our urine cultures. Blood, you know, is anti-bacterial, and if we do not dilute it, the organisms we are searching for may be killed before they have an opportunity to multiply. On the other hand, there may be so few bacteria in the blood sample that we may not find them when we dilute the culture. We must save the blood in the flask and incubate it, too."

"Will all types of organisms grow in this medium, Miss O'Hara?"

"No, Karen, but it is satisfactory for the bacteria that are normally found in urological infections. Other organisms call for different methods. When the clinician finds something unusual, he discusses the problem with us and we make any changes in technique that he thinks pertinent. The bacteriologist must always have his textbooks handy and must keep up on literature in current periodicals. New methods and discoveries are made every day.

"I can show you some cultures of Neisseria, if you like. They are more fastidious in their growth requirements than the bacteria I have shown you. Will you bring me the large glass jar that is in the white incubator?"

Karen brought the jar carefully to the work table. "It has a candle in it, as well as Petri dishes," she said.

"The Neisseria grow better under reduced oxygen tension and increased carbon dioxide," explained Miss O'Hara. "After the plates are streaked, we place them in the jar, light the candle and seal the jar. When the oxygen is reduced, the flame goes out. I want you to watch this

test, and then you may work alone for a while. If I talk much more, your head will swim and I shall be hoarse." She took one of the plates from the jar and examined it intently. "I think this culture will be positive." She poured some water into a tube containing a dry powder, shook it, and, with a pipette, placed a little on the surface of the plate. "If these be what I think they be—and yes, they are going to be—the colonies will turn a delicate pink and then become black. Look! Isn't that pretty?"

Karen watched, fascinated. "It's magic!" she declared. "Is it a specific test for Neisseria?"

"A few other organisms react positively to the 'oxidase test,' as we call it," replied Miss O'Hara, "and it is always better to check the finding by microscope. I shall smear a black colony on a glass slide, stain it, and then examine it under the microscope for Gram negative diplococci. If the organisms are Gram negative I shall report the culture as positive for Neisseria. As a final identification of the organism, we shall check the biochemical and immunological reactions of the strain. Now suppose you go to your own desk, note the growth in the tubes you inoculated yesterday and fish the organisms I marked for you to either infusion broth or blood broth. You will find tubes containing this medium on the table."

Karen did as she was told, and was soon deep in her own studies. She checked her work of the previous day and found that it was not all bad. With the help of the textbook, she planned the procedure necessary for further study and submitted it to Miss O'Hara for approval.

"This is nicely done, Karen. I'm glad to see that you can work independently. There are a few suggestions that I might make; things that you couldn't be expected to know and that textbooks don't tell you. After you become a bit more familiar with the organisms, I shall show you where you can short cut. Follow this procedure until you are thoroughly familiar with these types of bacteria."

The morning passed quickly and suddenly Karen was aware of Janet's removing food from the icebox. "Oh, lunch time! May I help?"

"Certainly," said Janet, cordially. "Pearl is making us iced tea and we lunch on the large desk. We each pay a dollar a week for food, and Delia and Pearl keep us supplied. The menu usually is very simple, unless someone becomes bored or ambitious and fixes a fancy lunch. As a rule, it's salad, cold meat, and occasionally soup—whatever sounds interesting."

"Lunch, lunch, what can I do to help?" boomed Dr. Johnson.

"It is about ready. Come on," invited Janet.

"Well, Karen! How did you get along today? How do you like our little bacteria?" said Dr. Johnson, as she settled herself. "What a beautiful lunch! Um—do I like sweet pickles! Oh, there you are, Maggie," as Miss O'Hara came in the door. "What have you been doing?"

"I have been sympathizing with the head nurse," replied Miss O'Hara, laughing. "A patient came in yesterday who is evidently a member of a gypsy band and at

least four of his friends have been staying with him constantly. Miss White said she was expecting momentarily to find them building a campfire in his room and singing songs of the gypsy trail. It's unusual to see tribal life of that sort in the dignified halls of Brady. For some reason it reminds me of the time one of the student nurses rolled an orange down the corridor to an intern. The orange glanced to one side and went between the feet of a most dignified head nurse, as she emerged from a side room."

"Will you ever forget Dr. Young's encounter with Dr. Butler here in the lab a few years ago?" asked Dr. Johnson.

"Tell the girls about it, Helen," urged Miss O'Hara. "It is one of the most amusing tales we have."

"We were having a lab party for Dr. Young and a famous Irish physician," began Dr. Johnson, "and we were making the most elaborate arrangements for it. Dr. Butler, our most serious-minded chemist, had written a song we were planning to sing. He had decided to accompany the song with a musical effect arranged from a series of specimen glasses, each containing a different water level. He had collected his equipment and was carefully adjusting the water levels in order that the tones of the glasses would be pitched properly when in walked Dr. Young with two very distinguished guests. Of course, Maggie and I were bending close above Dr. Butler's head, criticizing freely, and didn't realize we had company until they were in the door! Dr. Young certainly seemed surprised at the scientific research being done in his labora-

tory, and we must have shown our confusion at having him arrive at that moment! What the guests thought, we never knew, but how we scurried to our posts, ready to explain and answer questions! Children caught stealing jam couldn't have been more embarrassed than we were."

The girls laughed at the picture, and Dr. Johnson continued with other amusing stories about life in the laboratory. "It's one-thirty," she said, finally. "Let's hear the news."

After the radio had been switched off, Janet said, with a sigh, "It isn't very encouraging, is it? I suppose that this time next year we shall be in the war, too."

"I'm sure we shall," replied Dr. Johnson, soberly, "and there will be all kinds of jobs for young people to do. In the mean time, what is Karen doing this afternoon, Maggie?"

"She is such an apt pupil that I am going to show her how to do the routine cultures," replied Miss O'Hara.

"Good," said Dr. Johnson, and turning to Karen, "Maggie has that work the way she wants it, and she has me completely cowed. I wouldn't dare touch it."

"Nuts," said the dignified Maggie.

"Why, Marie O'Hara, what an expression! You know you wouldn't let me touch your cultures!"

"You have a few things of your own to attend to, my love. Did I ask you for some graduated ten c.c. pipettes?"

"You did, and I haven't had time to order them. I shall attend to it immediately. Right you are!" And she was off to her office again.

"Don't mind them, Karen. They go on like that all the time," said Janet. "Let's clear things away and we can step down to the porch on Brady Six for a spot of air."

Karen found Janet quiet and very charming. She seemed apart from the give and take of Dr. Johnson and Miss O'Hara. "They are wonderful," said Janet. "They are always teasing, but I can never think of a come back until the conversation is finished, so I sit quietly and listen to them. They are always amusing, unless they are deep in a problem of some sort, and then they won't take time to eat, except, as Miss Johnson says, 'on the hoof.' "

The afternoon was spent in study of routine cultures. In spite of Miss O'Hara's encouragement, things seemed pretty much in a muddle when Karen left that afternoon. "Why must I be so stupid?" she moaned to Sara Jane.

"Don't be silly," said Sara Jane. "In a week it will be easy for you." And Sara Jane prophesied correctly.

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SUMMER DAYS

"How are you coming, Karen?" It was Elsa's voice at the Gasser's telephone the following evening.

"A bit better, thank you, Elsa. I didn't feel quite so clumsy today. What's on your mind?"

"I was wondering if by any chance you had both Friday and Saturday off, because of the holiday. Some of us are going down to Gibson Island for the week end, and I wish you would come along. I didn't ask you earlier because, knowing your famous habit of straightening out one difficulty before starting another problem, I knew you wouldn't consider it until you had your establishment and profession well in hand. And, by the way, are you still satisfied with your plans?"

"Yes, thank you, to the last question. As to the invitation for the week end, I regret to say that I am not yet firmly established in the apartment. I need Friday to unpack my trunk and have a breathing spell, and I am going to work Saturday morning. What and where is Gibson Island?"

"It's a summer resort on the Bay. It takes about forty-five minutes to get there. Sailing, swimming, sun,—typical Fourth of July holiday. I wish you could come."

"I'd love to, Elsa, but I haven't straightened things yet, and I can't very well go barging off. Sara Jane doesn't have to work Saturday and she is going to Annapolis with Sue Clark; so Mary and I will fend for ourselves. Have a good time and call me the first of the week."

"Right. 'Bye, Karen."

Thursday Karen watched Miss O'Hara inoculate a guinea pig. The little animal was held firmly under Miss O'Hara's arm, and the hypodermic needle injected quickly under its skin. The procedure was finished before the guinea pig had an opportunity to protest. He calmly went back to his task of eating a large cabbage leaf, without realizing that he was now an important factor in the proper diagnosis of a man's illness. Later, in order to obtain blood, an indispensable ingredient of media used in growing certain pathogenic organisms, Miss O'Hara bled Beautiful Charley, the handsome white rabbit Karen had admired on her first morning in the laboratory. He showed by his willingness that he had been through the experience before and knew that it wasn't going to hurt him. Miss O'Hara took a syringe full of blood from his heart.

"How do you know where to go through the chest?" asked Karen.

"By feeling for the maximum heartbeat, about three fingers' breadth above the sternal notch," answered Miss O'Hara. "Then, as you go through the skin, you watch the syringe. When you reach the heart chamber, the blood wells into the syringe by its own pressure, and will

almost push the plunger up of its own accord. The technique takes a little practice, but it seldom hurts the rabbit. We use one for a year or so and then give him away for a pet. We grow very fond of some of them; I'm devoted to Charley. They have as different personalities as other animals, although you wouldn't think so to see them sitting stolidly in these cages."

Later in the afternoon Miss O'Hara examined some guinea pigs in order to establish a positive or negative diagnosis for tuberculosis.

"There won't be a happier person in Baltimore than Miss Frey, when Dr. Colston tells her that these pigs are negative for tuberculosis," said Miss O'Hara. "She has been waiting for the verdict for two months."

"Do you examine all the guinea pigs you inoculate?" asked Karen.

"We must," replied Miss O'Hara, "for we can't be perfectly sure of our diagnosis, otherwise, and the patient's life may depend upon the lesions we find in the guinea pig. See how beautifully the circulation of the blood shows in these animals." She pointed out the network of tiny vessels carrying fuel to the cells of the intestinal wall.

"It is beautiful," said Karen, leaning over to see more clearly. "I thought circulation stopped when the heart stopped beating."

"It takes time to send communications over such an extensive system," declared Miss O'Hara.

The afternoon passed quickly. Karen, although conscious of tired feet, thought the weariness was more than recompensed for by the exciting events of the day.

When she reached the apartment, she found her trunk, along with several other packages. Mary was gazing at them thoughtfully.

"I should say that one was obviously food," she said. "Since I happen to be chef this evening, I should admire, ma'am, to know what lieth therein."

"Oh, you would! Well, suppose you give me a chance to climb into my shorts and I shall strive to satisfy your curiosity. I am about to die of the heat. Has Sara Jane been here?"

"She was in and out like a storm," answered Mary. "Tossed a few things into her bag and departed. Sue's uncle gave them a ride."

"That was nice for them. Mary, I am beginning to feel holidayish. Oh, look! Isn't this fun? Both packages are marked *perishable!* You open one and I'll open the other! How sweet of Lucinda! Mother has told her that we do our own cooking and she probably thinks we shall starve."

"Brownies!" cried Mary. "I haven't had any in years!"

"Fried chicken!" exclaimed Karen. "That solves one meal—maybe two! Here are two cans of soup and this must be potato salad in the glass jar. Into the icebox you go—nothing worse than warm potato salad!"

"Chocolate cake in this tin box, Karen!"

"What's this?" asked Karen, taking out a bumpy par-

cel. "That's right, we are celebrating the Fourth of July! Three little flags and three little packages of firecrackers. Mother doesn't know that we live in a large city where shooting crackers is outlawed."

"It may be outlawed, but I know some little boys who are outlaws," said Mary. "There have been noises in the back ever since I came home. They would probably be filled with glee if we lit the crackers and tossed them into the alley!"

"No doubt, no doubt," agreed Karen, laughing. "And you, Mary Wells, would probably be delighted to take those crackers down into the alley and set them off with the little boys! Now wouldn't you?"

"Well, it would be fun," asserted Mary.

"This is another suggestion, not nearly so exciting, but probably more pleasing. Miss Johnson wants us to come over to her house for supper Sunday evening. Is that O.K.? I accepted for me but told her I'd call about you."

"I'd love to go, Karen. Sue says her apartment is most attractive and that her aunt is charming."

"Right. I'll call her, presently. Have you a date for tonight?"

"No. How about going up to Clifton Park to play tennis? Would your racquet be in your trunk?"

"That's a fine idea! I know exactly where my racquet is!"

A little digging brought forth the racquet. The girls ate a quick dinner and went on their way, with an hour and a half of daylight ahead of them.

Firecrackers were forbidden in the city, but minor explosions were heard during the night, as some enthusiasts insisted on their right to express patriotism with powder and fire. Several times the fire engine sirens were heard as the neighborhood fire truck flew up Broadway.

"Does it seem to you that there are a great many fires around here?" asked Karen of Mary, as they leisurely ate breakfast.

"The fires don't seem to be serious," answered Mary, "but we certainly hear a lot of sirens. I suppose the wood stoves that are used extensively in this neighborhood become overheated easily and the fire companies must be on the alert. You know, once upon a time, a large part of the city burned."

"The firemen probably use the siren to announce triumphantly that Baltimore is now well protected. Wonderful not to hurry this morning, isn't it?"

"Marvelous!"

Karen worked industriously all morning. She unpacked her trunk and discovered to her delight that it made an excellent bedside table. Books in the bookcase, prints on the wall and a few of her favorite possessions in sight made a great difference.

"Your prints are lovely, Karen," said Mary, admiringly. "They brighten the living room beautifully."

Karen viewed her interior decorating with satisfaction. "I hope Sara Jane won't mind the way we've plastered the walls with them. That's what comes of being the daughter of a linoleum designer," she answered.

"I think the effect is quite artistic, although I shouldn't have thought of doing it that way myself. My conservative Middle-West background, I suppose. There's Mr. Gasser calling. Thank you, Mr. Gasser. I'll be down in a second." Mary slipped into her skirt and went down the stairs.

She returned shortly, a bit breathless. "That was Clayton Shaw calling. One of the older doctors, Dr. Jones, has asked some of the interns to his place on a river for a swim this afternoon, and Clayton wanted to know if we would go along. The boys have to report at the Hospital at seven, so we won't be late. O.K.?"

"Fine! I'm practically organized now and this won't take much longer. Weren't they nice to ask us? What do we wear?"

"Play suits and bathing suits. It's informal. Clayton said we would have mint juleps. Have you ever had one? From what I've read, they sound pretty formidable."

"No, I've never had one, but I know that you must sip them very slowly and never hurry over one."

"Thank you for the tip. I didn't know that."

An hour later, eight young people in an ancient Chevrolet fought the holiday traffic of the Philadelphia Road. Passing the immense buildings of the Glenn Martin Plant, some of them still under construction, had a sobering effect on them—everywhere signals were pointing to all-out efforts for war.

"We are more conscious of it, here in the East," declared Mary, "but the Middle West must see it, soon.

Look at the planes!"

They were beautiful things—hundreds of them on long flat runways, lined up for extra parts or inspection.

Soon after, the party was being greeted cordially at a spacious old house, facing a wide river. There were people of all ages milling about and everyone was so friendly that the group from the Hospital felt at ease immediately. They were given easy chairs overlooking the shining water, and served with tall frosty glasses, topped with mint. They felt completely relaxed and very luxurious.

Conversation was of boats and fishing, with a little Hospital talk for spice. Karen and Mary enjoyed listening to the others and watching the boats on the river as they lounged lazily.

Later, they had a ride in Dr. Jones's cruiser, and a swim in the Bay. The water was warm and pleasant.

"I thought the water would be saltier than this," declared Karen. "It's like fresh water."

"We are right far from the ocean, here," said Dr. Jones, "and these arms of the Bay that we dignify by calling 'rivers' are fed by small streams. Farther south, the Bay is saltier. Edgewood Arsenal is near us, and during the week, much of this area is closed to boats because of the tests that are being carried on. The increase in factory space at Martin's and the roar of the guns at the proving grounds make us aware of war."

The little craft nosed her way along the wharf, and the young people thanked their host gratefully for their ride

and swim. After sandwiches and iced coffee, they returned to the Hospital, cool and refreshed. The boys went to their posts to relieve others and the girls strolled home.

There was little work at the Hospital the morning following. The Institute seemed to have fallen asleep for the week end. Karen, having attacked some reading that Dr. Johnson had outlined for her about bacteria and growth factors, decided that she needed something more elementary and browsed around in the chemistry book. She was much interested in the implications Dr. Johnson had pointed out to her in these problems.

"If you are interested, and have time in the fall," Dr. Johnson had said, "you may help me with some experiments. There are a number of possibilities that we might try."

Karen went home with three books under her arm and for the next twenty-four hours, all enticements to play were refused. Time not spent in housekeeping was used for the study of enzymes.

Sunday evening Karen and Mary sallied forth in best bibs and tuckers to have supper at Dr. Johnson's apartment. The sedate beauty of her lovely old furniture and silver made a perfect background for Dr. Johnson's charming aunt. The atmosphere was in sharp contrast with the informality of the Hospital and their own apartment. Dr. Johnson's beautiful prints and the fine books bearing evidence of years of critical collecting appealed

particularly to Karen. After a simple supper, served with exquisite taste, they talked quietly through the long summer twilight.

"Isn't that a lovely apartment?" said Karen, as they rolled homeward in the bus. "It's a perfect setting for Dr. Johnson because it's so different from her Hospital life. What a versatile person she is!"

"I never saw any place like it," said Mary, honestly. "Such beautiful taste in so many things, and somehow all well blended! I'd like to think I could build myself a background like that by the time I'm forty. Do you think I could do it in seventeen years, Karen?"

"Seventeen years sounds like ages! Mother says it's an art in itself to learn how to collect with discrimination, but also that it's an art to know what to discard, as you grow into a new period of life. I hate to throw things away! After seeing that apartment, I think I understand what Mother meant, and I should certainly like to have a place as characteristic as it is. It's an inspiration!"

When they reached home, Sara Jane was found cheerfully washing clothes, her back a delicate pink, her nose a mass of freckles. She had much to narrate about the joys of Annapolis and the sailboat, and much to hear about the upper Bay and Dr. Johnson's apartment. The trio put up their hair and creamed their faces, chattering as if they had been apart for months.

Summer days passed rapidly and happily. Karen learned her technique thoroughly and read widely, with

a critical ability that delighted her instructors. Swimming, picnics, and occasional lazy week ends contributed to an existence more pleasant than Karen could possibly have anticipated.

She spent Labor Day with her mother in Yorkville. Mrs. Long found an older, better poised daughter, with a considerably more elastic vocabulary and considerably more sunburned hair and skin. Karen and her mother were glad to be together again.

"Mother," said Karen, "you are the most eminently satisfactory person to be with. I'm having a great time with Sara Jane and Mary, but we seem to have to talk to each other so much. When I'm with you, we don't always have to talk to express our thoughts. Sometimes I have to get away from the apartment to relax mentally, I shouldn't like living that way all the time. Mother, could you be laughing at me?"

"I could be and am, dear. You talk about 'relaxing mentally' when you are absorbing more miscellaneous information than you ever will again! You couldn't have learned one-eighth of what you have learned this summer if you hadn't had your roommates. Think of the people you have met through Sara Jane and Mary and the places you have been. Those girls may chatter, but they have a sturdy independence you need to experience. Forget 'mental relaxation' for a few years—you are still a student, aren't you? Concentrate on everything you do: work hard and play hard, and, by the way, be sure to hear some music this winter. Don't get so tied up in science

that you forget the arts. Music will take care of some of your desire for quiet, Karen. You will probably always be a little lonely, inside, and for that reason you must now try to seek new experiences and meet different types of people. You won't do it when you are older. People may seem commonplace at times, but they are a very necessary part of our lives and each one is interesting. Possibly you and I are both too self-sufficient. I've loved living through your summer in Baltimore with you, and I think that if I could have had a similar experience when I was your age, I should have been a more tolerant person, now."

"Why, Mother! You aren't intolerant!"

"Not only intolerant but devastatingly critical. It's my worst fault, I think. I try, however, to watch myself, and if I must criticize, do so silently, unless I can make a constructive criticism. Certainly you have discovered that there is nothing more boring than to have to listen to someone 'crabbing' about another person's errors."

"Well, you've concealed that weakness admirably all these years. And thanks for the tip about the garrulousness. I know we all talk too much, and even in our work give evidence of a lofty superiority that probably doesn't exist. Thank you, ma'am, for the lovely lecture. I shall try to remember."

"Tell me about your plans for the fall, dear."

"I haven't talked it over with Dr. Johnson again, but when we discussed it about a month ago, we decided that I should take a course a semester with the medical stu-

dents. I think I should prefer to spend my time reading, but she thinks the contacts with the instructors and students are important. The graduate work at the School of Hygiene is interesting. Sara Jane can't wait to get back, but I think I am spoiled by working with Dr. Johnson. She is swell, and it's so much fun to be independent and read as you want."

"She thinks apparently as I do—that you need more human contacts. Now about your music this winter. Symphony concerts?"

"Yes. Season ticket to the National Symphony series. The Philadelphia Orchestra plays in Baltimore, too, but it's so expensive. Janet says she goes with some of the students and they buy standing room."

"Will there be any chamber music?"

"Well, there is a series, but, Mother, it bores me to death. That's probably being intolerant; at least it isn't showing an open mind—but I think those Mozart quartettes of yours are deadly."

"All right, my sweet. If you aren't ready for them, you aren't. But mark my words—there will come a day when those Mozart quartettes will be comforting music for you. Sometime, I want you to have your own phonograph and to be able to listen to some of them in your own house. You have been home very little in the last few years and I have learned to love the hours I've spent listening to chamber music. After all, it was written for small gatherings and small rooms and I find it a better companion than the symphonies we like so well in concert halls."

6

ANIMALS AND ADVENTURE

It was a typical Tuesday after Labor Day. Karen walked into the laboratory to find Delia and Pearl at their dusting —but in this case it was cleaning. There had been thunderstorms over the week end, and one window, inadvertently left open, had admitted wind and rain. The floor was strewn with papers and broken glassware.

"My word! What a sight!" exclaimed Karen. "And what a smell! I don't think those animals have been cleaned for days. What do you suppose happened to Freddie? And who in the world left the window open? I know I closed it Friday and I was the last one to leave."

"We'll clean the cages and feed the animals, Miss Long," said Delia. "Something must have happened to Freddie. I have to make media, but as soon as I can get it on to boil, Pearl and I can take care of everything."

"I can help, too," Karen offered, "as soon as I inspect the plates. Gracious! Someone tried to make a blood culture. Look at my table! I thought our interns knew how to use a laboratory!"

Miss Johnson and Miss O'Hara, coming in a few minutes later, found Karen in a gloomy mood. "Always happens like this over Labor Day week end," said Miss

O'Hara, cheerfully. "The holiday should be abolished."

"Not on your life," Miss Johnson interposed. "Animal boys and interns should be abolished. I'll bet the rabbits in the cellar are a sight, too. Maggie, if you and Pearl will clean up the animals in the lab, Delia and I can take on the ones in the basement, later."

"I can help, Miss Johnson," volunteered Karen. "Pearl and Delia know how to go about it, and they can show me. We can clean while Miss O'Hara is making her report, I'm sure. How about it, Pearl?"

"Sure, Miss Johnson. Now don't you trouble about this. We'll take care of it."

"Where in the world can Freddie be? The week end must have been too much for him."

"Wait till I find the person who made that blood culture," said Karen, darkly.

"He must be new," commented Miss O'Hara. "We had all those boys trained to read directions, I thought. Maybe some of the staff went away for the week end and a student is substituting."

The desk was cleaned. Then Karen and Pearl set to work with a will. Sawdust had to be changed in every guinea pig's cage, oats and cabbage replenished. How those little animals squealed for food! The rabbits were harder to care for because their cages had to be taken apart and scrubbed. The pans underneath them were emptied, washed and filled with disinfectant. The morning grew hotter and hotter, the girls dirtier and dirtier.

"There," said Karen, finally, pushing a damp lock

from her forehead. "We are ready for the basement. At any rate, the place is cleaner than Freddier ever got it."

"Is the bacteriologist here?" asked a strange voice, and Karen looked out from the dirt to encounter a young man in intern's clothes.

"I'm a bacteriologist," she answered, and then in response to an expression of incredulity in his eyes, "masquerading as animal boy."

"Oh, is that what you are? I thought that you were the chimney sweep."

"Flattering, aren't you? As bacteriologist, what can I do for you? Miss O'Hara is in charge of the routine work, and she is off the floor now. I'm Karen Long."

"I'm Joe Pendleton, Miss Long, and I've come to intern in Bob Jackson's place. His mother is ill and he had to go home. I regret to say that at two o'clock Sunday morning I had to take a blood culture. I came up here for the medium, opened the window—it was as hot as blazes—went to draw the blood, and by the time I got back here the storm had broken. There were papers all over the floor and among them, somewhere, were the directions for making the blood culture! I left things in a terrible state, I know, but I had to attend to the patient. I closed the window most of the way, intending to return later and try to straighten things—but truly, I've been on the jump ever since. The staff was depleted over the week end and I am so green that it takes me twice as long to do things as anyone else in the world! The least I could do was to come back and apologize." He smiled so in-

gratiatingly that Karen forgot the threats she had made.

"May I come back sometime when you are not masquerading and learn how to make a culture properly?"

"Certainly," answered Karen. "It is simple when the directions haven't flown away."

About this time Miss Johnson could be heard shouting at someone in the hall.

"What is going on?" asked Dr. Pendleton. "Who is that with Dr. Johnson? Look at him!"

Down the hall came Dr. Johnson, shouting in the ear of an aged and obviously decrepit man who was supporting himself with a cane. She looked a little worried, but there was a hint of amusement in her voice.

"Karen, this is Freddie's grandfather. Freddie fell out of a tree Saturday and broke his leg. His grandfather, kind old soul that he is, wants to take care of the animals until Freddie can get around again."

"John," she shouted, turning to the man, "these young ladies will show you what they want done."

"Yes, missus," he answered in a quavering voice. "Just help me for a few days, missus. I learns fast."

Miss Johnson retired to her room. Dr. Pendleton, his eyes dancing, said: "Never a dull moment, Miss Long. I will see you later."

"I'll help the old gentleman, Miss Long," voluteered the redoubtable Pearl. "You go on with your work. He must be a hundred and it looks as if he doesn't see very well. I'll take him to the cellar and show him what to do."

At this point Miss O'Hara returned and the look of

blank amazement on her face set Karen into a fit of giggles.

"Where in the world did Helen find him?"

"He's Freddie's grandfather. Freddie broke his leg."

"How awful! But there must be someone more agile than his grandfather in Freddie's family. My goodness—he is so frail he can't even carry the cabbage baskets. Did you ever see anyone so old?" She surveyed the room. "You all have certainly made progress. I don't know whether the odor is worse or better in here now. It still smells, but mostly of disinfectant. I suppose the fan will clear the atmosphere. There are millions of patients downstairs—the place is a madhouse. Everyone must have waited until after Labor Day to be ill."

Pearl and John retired to the basement, and Pearl returned later, laughing until the tears showed in her eyes. "I shouldn't laugh at the old man, I know, but he is too funny. I don't think he's strong enough for this work, and he can't see well. A rabbit got out of a cage and I had to show him twice where it was."

Miss Johnson emerged from her room. "How did Methuselah get along, Pearl?" she asked.

"He's too weak, Miss Johnson," answered Pearl, "but he said his nephew would come tomorrow. At any rate the place is clean, down there. What a job!"

Karen was conscious of cresol all afternoon. It seemed to have permeated everything about her. "I must slip home and get into the tub immediately," she thought. "Thank goodness this isn't my cooking week."

Work was heavy, however, and she was late getting away. She walked into the apartment, and found not only the sharers thereof, but Sue, also.

"My soul, Karen, what have you been doing? You smell worse than a medical student after anatomy class! What is it?"

"Cresol and animals! I admit I ain't no rose, but give me credit. I was going to come in quietly and get into the tub."

"Don't leave your clothes in the hamper—put them on the porch to air," said Sue, with wisdom born of experience. "Better wash you hair, Karen. It's probably polluted. It couldn't have happened that your animal boy didn't show up today?"

"It certainly could and did. Freddie had an accident Saturday and no work had been done since. I am cresol inside and out. Will some kind soul pour me a coke with lots of ice while I scrub? What a day! I'm going to shampoo my hair and then I wish someone to sniff me. I feel as if I shall never be pure again."

Karen retired to the tub but it took several scrubbings, rinsings and a lavish portion of jasmine bath salts before she was approved by her friends. She finally emerged, sweet and clean and found dinner ready.

"Karen," said Sara Jane, "Jack just called that he was coming over this evening. He's been accepted for the Air Corps!"

"Oh, I'm glad he got his appointment! He's been so

impatient about it—but what are we going to do without him?"

Jack had been in evidence most of the summer, doing chores for the girls and squiring any lady who needed a beau. He played no favorites, and if there was one of them who rated higher than the others, they were never able to discover her. The girls accepted him on this basis, and were always glad to have him around.

Karen and Mary were washing dishes when Jack's ring was heard. Karen, completing her duties, hastily powdered her nose and joined the group in the living room. Jack told them the details of his appointment and the plans for his departure. Then he said, abruptly, "Where's Mary?"

"She's finishing up," answered Karen, "but she should be through by now. Mary!"

"I'll get her," offered Jack, departing hastily to the kitchen.

Nothing was heard from that direction for some time, and Sara Jane remarked, slyly, "Think you there is a suggestion of romance?"

"I've wondered," answered Karen, "but Mary's such a poker face and if she thought Jack didn't like her, she'd never say a word. On the other hand, he's so nice to everyone, it's hard to tell."

And then, back the two came, hand in hand, Mary's blue eyes a bit dampish and her red curls very much disheveled.

"This nitwit was weeping, mind you, because I was going away. Did you ever hear of anything so absurd? I've been mooning around all summer, thinking I hadn't a chance with her, and now, since I'm leaving, she actually sheds tears."

"Well, you needn't shout it to the high heavens," Mary retorted, defiantly. "How was I supposed to know that you liked me best? As far as I could tell, I was just another woman in your life!"

The other girls were delighted by this turn of events. Karen said, pacifically, "Now, children, is that any way to talk? I think it's simply wonderful, but you two ought to try to be friends through such a trying ordeal."

"I don't like to walk out on you ladies," said Jack, "but would you all mind if I drove this woman around in the car for a while? It looks like maybe someday we might get married, so perhaps we should talk it over."

Mary, a bit flustered, dashed into her bedroom, and emerged a bit later, washed, combed and with such an ecstatic expression on her face that Sara Jane could not resist hugging her.

"Why didn't you make up your mind a month ago, silly?" she whispered.

"S.J., I honestly didn't know until I heard about his going away, and then I thought I'd die. Oh, S.J., I'm so happy! He's so marvelous!" Out went the absorbed pair, not bothering to close the door behind them.

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MICE

Emphasis was shifting. Now incidents formerly thought important seemed trivial in the light of international affairs. Jack's experiences in the Air Corps provided animated discussion in the apartment, while in the Hospital, the shadow of war hovered over all activities. Everyone seemed to be working feverishly to accomplish as much as possible before the time came to take up other tasks. Every day at noon the little radio in the lab announced the news, and on the wall above it was pasted a map for ready reference.

Classes began in late September and Karen's mornings were filled with lectures on medical bacteriology and pathology. It was fun to be in class again. She found that her summer reading had given her considerable background and also that the reading she had done in the current literature had brought her up to date in her own field. There was, however, much of the urological technique in clinical medicine that interested her. She read in urological anatomy and went to ward rounds Friday morning with Miss Johnson. These were classes for fourth year medical students. Case histories were presented by students and members of the staff. Any x-ray pictures

taken of the patient under discussion were studied and Mr. Didusch's moving pictures of surgical procedure similar to that deemed necessary for the patient were exhibited. Then, if an operation had taken place and tissue removed, it was also shown.

"This is the modern way to teach surgical procedure," Miss Johnson explained as they rode up in the elevator after a particularly interesting session. "The students don't have to wait to see a specific operation. They are shown the details in the moving picture at the same time they study the condition of the patient. Furthermore, in the movie, there aren't the thousand and one interruptions and irrelevancies that interfere with teaching in the operating room."

"There is only one flaw in ward rounds, Miss Johnson," replied Karen. "In spite of all the agitation that goes on about the necessity for fresh air, no one thinks of ventilation when he's at ward rounds. If we are in the big lecture room or examining patients on the ward, I'm half-asleep or half-suffocated when it's all over."

"Queer, but it's always been like that," responded Miss Johnson, reflectively. "The medical profession as a whole seems to dislike fresh air, judging by the way windows are kept closed at medical meetings and lectures. Let's step out on the porch on Brady Six and take one hundred deep breaths. It's a beautiful day!"

The sixth floor of the Brady Building has two broad porches. One of them looks over the Halsted Building on one side, and the Marburg Building on the other.

Across a small lawn is the Phipps Psychiatric Clinic. On the grass, children and dogs played; along the concrete walk leading from the far buildings, white coats moved briskly.

"We seem secure, here," said Karen, thoughtfully. "But what damage a bomb could do! Do you think Baltimore could be bombed, Miss Johnson?"

"I should think that it would make an excellent target because its position is so well marked by the contour of the Bay, and with the industries that cluster around the city there would be a good reason for attacking us. It will be very important to have hospitals on the alert for disaster when war comes, and there will be a great many tasks for laboratory workers. We shall have to do blood groupings and matchings, give transfusions, as well as other ministrations, because we shall be short of nurses as well as doctors, I presume."

"Should I begin to look about for a job for next year? I want to be where I shall be useful, but it seems to me that the more I learn, the more I discover I don't know."

"Don't think about it just yet. We shall find something for you in the spring, and by that time you will be better equipped to select your best course, Karen. I want to begin some experiments with mice soon, and if you have time, I should like very much to have you help me."

"I should love to, Miss Johnson, and I'm sure that I shall have time."

"Mice have been a great boon to the scientist and there should be paeans of praise for them and for all other

laboratory animals that have been the means of furnishing information regarding human illnesses to the physician. We could never have learned as much as we know about disease, were it not for our animal friends. Come, let's go up to the lab and order the mice. The last time we were using them in the laboratory, one escaped. The little fellow was found two days later on an intern's bed. He was very grubby—in fact so gray he looked like a wild mouse—and he was delighted to return to his cage, because apparently he couldn't find food and water in the wide world. He must have had a story to tell his friends."

The next Monday, a hundred mice, very white and very active, arrived in the laboratory. They had been mailed in tiered wooden boxes, twenty-five in a compartment. Pearl and Delia calmly picked them up by their tails and transferred them, four at a time, to small round glass cages. Their sleek bodies and quivering whiskers were in constant state of movement, as with intense curiosity they investigated their new quarters. Karen could not keep her eyes away from them.

Miss Johnson took one from its cage and let it examine the surface of her desk. "See how fearless he is!" she said. "Usually they make no attempt to run away, and as a rule are quite gentle. Maggie," she called, "will you come and show Karen how to hold these animals so that she can help me tomorrow?"

"Hold him by his tail, Karen," explained Miss O'Hara. "Let him stretch his full length, but don't let go of him.

And then, with your left forefinger and thumb, grasp him by the nape of the neck. Turn him over, like this," deftly exposing the little creature's abdomen, "and Miss Johnson will do the rest. Just remember to hold him as close to his head as possible because these angelic-looking little mice will nip you sometimes, and it always is a great surprise to the one nipped. Look how annoyed he is." The mouse's whiskers were twitching with indignation and the women couldn't help laughing at the expression on his face.

"He looks exactly like my great aunt," observed Maggie. "The Democratic Party used to affect her that way. Now Karen, you try holding him."

Karen was a bit awkward at first, and brought on squeals by dropping the first mouse she tried to hold, but she soon learned to turn them over with ease.

"Sometimes," continued Miss O'Hara, "we find intrepid mice who seem more intelligent than their companions. They are much harder to hold and have considerably more agility. One wonders what superior race of mice might be established by breeding some of these versatile creatures."

"There you go again," said Miss Johnson. "Karen, I can never decide whether Maggie should have been a geneticist or the mother of twelve children. There seems to be craving for studying perfect reproduction that bacteriology doesn't satisfy."

"I might try the twelve children," responded Maggie, so thoughtfully that Miss Johnson looked startled.

"Stick to bacteria, my friend," she advised, "I can't spare you long enough for an experiment of that length. After all, you have twelve nieces and nephews."

"Are we going to inoculate a mouse or are we going to have twelve children?"

"Just one mouse; but Karen had better have some idea of what is going on hereabouts. Poor child, no one ever tells her anything!"

"I know what you are going to do first," said Karen. "At least, I know what I should expect you to do first and that is to inoculate mice with a culture of streptococci and see how virulent the strain is!"

"You may go to the head of the class. The object of the experiment will be to make the mice ill with a streptococcus infection and then see if we can cure them with specific amounts of the drug we are going to test. We have to be sure that the amount of drug we give will not injure the mouse. Another important point is to inoculate enough mice so that a sufficient number of them are cured by our drug. Results, in order to be valuable, must be statistically accurate.

"Karen, a mouse is escaping!"

An adventurer was wending his way across jar tops, and at the sound of Miss Johnson's voice, he gave a bound, was on the floor, across the room and under the rabbit cages. Three feminine bacteriologists followed in full cry.

"I have him," shrieked Karen, grabbing him by the tail. "Ouch!" Mr. Mouse hit the floor again as Karen

nursed a nipped finger. "They can bite, can't they?"

"Here he is," panted Miss Johnson, from behind the guinea pig cages. "Give me some forceps. Quick!" The forceps did the trick; the would-be explorer, caught securely by the tail this time, was deposited in his cage and the door carefully fastened.

"That's that! To continue where we left off when Vasco de Gama so rudely interrupted—we shall begin today to test our streptococci as a preliminary experiment. In a few days we can begin our drug tests. Karen, have you ever made any leucocyte counts? I am sure you did some in college, but brush up on your technique. Suppose you go over to Dr. Wintrobe's lab this afternoon—you must know some of the girls there—and see whether they can help you. It will be important for us to know whether the drug causes any change in the number of white blood cells in the mouse."

"I'll call Helen Stone, in Medicine," Karen said. "She does the routine there, and if she isn't too busy this afternoon, she can show me. I loved doing cell counts in college."

Later in the day, Karen walked through the corridors to the Dispensary. As she went by the Orthopedic Clinic, Pete Loring, a medical student, almost walked into her.

"Hello, Karen. Come over to Leo's and have a coke."

"I'd love it," she answered, "but I'm on my way to see Helen Stone. I want to learn something about blood counts."

"I'm not impressed," returned Pete, calmly. "I was

watching you the other day at rounds and thinking that you hadn't been stepping out enough lately. You have furrows on your brow."

"Oh, is that so? You should have seen me chasing mice this morning. I should think I might have worse than furrows. Yet I was a frivolous young thing, once!"

"Blame it on mice, will you? They tell me white rats are pleasant companions, too. Come along and we'll drink fast."

They skipped across the street and into the lunchroom. They ordered their cokes at the counter. The usual motley crowd was there: medical students, interns, patients' families, and miscellaneous people.

"Seriously, Karen, you need some night life. Let's step out Saturday."

"Oh, I'd love to. What shall we do?"

"There's a dance at the fraternity house. Let's brave the mob! I'll be around about ten."

"Thank you very much, Pete. I shall be making myself beautiful in the meantime. Now I must run."

In a few minutes she was in the laboratory on Medicine One. This was a small laboratory for clinical work, and it housed Helen Stone, technician for the Clinic. Helen was examining a blood smear under the microscope, and Karen, seeing that she was counting, did not disturb her. Helen was short and round. She looked up in a minute, showing red cheeks, very white teeth and deep blue eyes.

"This was a good day to come, Karen, for I haven't

much to do. There are so few patients. We do blood counts on every admission but I finished them ages ago."

"What else do you do, Helen?"

"Oh, most anything—depending on how much time I have. Sedimentation rates of red blood cells, hematocrits, hemoglobins, urine analysis and any special tests that are wanted."

"Do you look for malarial parasites or anything like that?"

"Well, of course, we are always on the lookout for anything unusual—I can diagnose malaria, although I have seen the forms only once in this clinic."

"Where did you work before you came here?"

"After I graduated from college, I went into a hospital for six months to learn bacteriological technique and then took a job with an industrial plant in Pennsylvania. They had a little Hospital connected with the factory and were making routine roentgenograms of the lungs of all the employees. I ran the x-ray machine and developed the films, which were read by the doctor in charge. The blood of anyone with diabetes had to be checked regularly for sugar and I did that, as well as any other technical procedures that were called for. We had a nurse on duty all the time, and people who were ill could stay in the Hospital. It was fun, but I got tired running normal specimens. We never found anything unusual, which, of course, was fine for the employees but too dull for the technician. I was glad to come here where there are more interesting illnesses!"

Karen laughed understandingly at Helen's professional zeal for illnesses in quantity.

"I'm surprised that you had so many normal specimens when you were working with so many people," she said. "Of course, when you work in a hospital, it's hard to remember that there are many people in the world who have nothing seriously wrong with them!"

Helen carefully demonstrated to Karen the possibilities of error in studying the blood samples. Karen practised a little and then returned to Brady, confident of her technique. Her confidence was slightly misplaced, however, for she required several days to improve her skill sufficiently to keep her margin of error within proper limits. She was then ready to study blood of mice for changes that might be expected from an overdose of the drug.

Helping with the experiments was interesting, although the work proceeded slowly. There were numerous problems that rose in connection with the study that could not be foreseen, and Karen found that her protocols, as the original notes on an experiment are called, were difficult to maintain unless she made daily records in her notebook. The mice, marked with blue or red dye so that they might be differentiated, looked slightly bizarre. By Saturday Karen felt she had had months of white mice and knew them thoroughly.

8

PRETZELS AND PLANS

It was a perfect fall day and a gusty wind blew leaves and papers along Monument Street. Mary was weekending in New York. Karen met Sara Jane at the Accident Door and they strolled toward the market.

"I should wash my hair and press my evening dress this afternoon but I don't want to," said Karen. "I need air."

"I should go to the library, but if you have any ideas—" began Sara Jane.

"Let's do the marketing and go over to Druid Hill Park and rent some bicycles."

"Bicycles! I can't bicycle, Karen. It wouldn't be safe for anyone else!"

"Don't be silly, S.J. I can't do so well myself, but it's such a beautiful day that we should stay outside. Unless you think it's safer to play tennis—"

"I'm sure it would be safer, but now that you've mentioned bicycles, tennis sounds too tame."

They marketed and took their packages to the apartment. There they ate sandwiches, donned play suits and skirts and were shortly on their way across town. Fairly decent bicycles were obtained at the park and the job

of balancing began. Karen had ridden in college and after a short period of unsteadiness was able to keep herself going with a fair degree of assurance, but Sara Jane insisted on pointing her wheel at every passer-by, forcing each one to flee in terror. She finally aimed at a riding horse innocently making his way along a bridle path and beast and rider looked so startled that Karen and Sara Jane laughed till they ached.

Their eyes grew bright and their cheeks red from the exercise, however, and when they left the park at five they knew they had had a work out. Sara Jane, having an early date, fixed supper while Karen washed her hair and pressed her dress. It was a red one, and Karen felt very gay.

She dressed early and came in the living room for admiration.

"Karen, you look simply super. You should be going out with the top hat and tails trade tonight! My date isn't going to have a minute for me if he sees you first."

"You aren't too homely yourself. I think it's being outdoor girls that cheers us. I feel wonderful, but something tells me a few muscles are going to complain tomorrow."

"I shouldn't be surprised, and I am going to have a few more than you, I think. What's this one? The Gastrocnemius? He's complaining already, in both legs."

Sara Jane and her date having departed to hear some phonograph records at the Pithotomy Club, Karen turned on the radio and selected a detective story. She had no

intention of being scientific this evening.

Pete arrived about ten and was very much pleased with his date.

"No furrows on you tonight," he teased. "We are going over to the Browns to pick up some more people before we crash the ball," he continued. "Do you know Bob and Eda?"

"No, I don't think so. What department are they in?"

"Bob's resident in pediatrics and Eda is working in Medicine. She's a clinician, too, of course, and a smart gal. Bob comes from my home town and they have been swell to me ever since I started medical school. Eda's interested particularly in infectious diseases and that means bacteriology. If you must talk shop, you should have something in common."

"I am not being scientific tonight. I am being glamorous and you needn't say you can't recognize it, either. No shop talk!"

"Bet?" jeered Pete. "I've never seen a medical gathering yet that didn't degenerate into shop!"

"Bet!" retorted Karen, in the same tone. "If there is shop talk, I am not going to be responsible for it."

The Browns lived in one of the little houses behind the Hospital that are rented to the doctors serving as house officers. The tiny living room was crowded with six people and as Karen and Pete came in, there was a roar of laughter.

Their hostess, a charming young woman with red hair and green eyes, greeted them with a chuckle in her voice.

"Hello, Miss Long. Hello, Pete, my child. We were just talking about Dr. Welch, and Joe Pendleton reminded us of that funny story about 'Popsy.' You know Joe, don't you? And these other people?"

They were swiftly introduced. Then Dr. Brown said: "Tell it again, Joe. It's a wonderful anecdote."

"The story is about 'Popsy' when he was attending a conference in Geneva. You know, he was quite rotund, but always carried himself with great dignity. The commission met at breakfast the day after their arrival, and one of the ladies remarked that it seemed strange that she was unable to get into the bathroom before eight-thirty in the morning.

"Not at all strange, Madam," replied "Popsy." "I am sleeping in the bathtub, as there are no beds available, and I never rise before eight-thirty."

They laughed again, and Joe continued, "Miss Haynes told me a funny one on her chief today. Said Dr. Hartnett had been dodging a book seller for a week, and today when he opened the door of the clinic, the man was standing right outside. Dr. Hartnett lost his memory, temporarily, and got the book agent mixed up with a former patient. He greeted him effusively, asked him how long he had been waiting and why he hadn't knocked and urged him to come right in. Miss Haynes said the book agent's face was a study. He realized in a minute what Dr. Hartnett had done and he made hay while the sun shone. He had Dr. Hartnett's name on the dotted line before he knew what it was all about, and was Hart-

nett humiliated! He sulked all afternoon."

Conversation became general, and after a while, Eda said: "How about it, people? It's getting late and it's Saturday night. If we are going, let's go!"

They trouped down the street to the old fraternity house and were soon blended with the others. There were too many people, everyone talked too loudly, the music could not be heard, but they all had a wonderful time and there was no talk of shop.

"Guess I owe you a dollar, Karen," said Pete, as they strolled down Broadway, munching pretzels. "I didn't hear a patient mentioned this evening."

"Guess you do," agreed Karen, her mouth full. "Let's skip!"

Hand in hand they skipped. As they came by the Nurses Home, a masculine figure could be seen in the shadow, tenderly bidding his lady love adieu.

"I'm going to offer them pretzels, Pete. They look so hungry."

Before Pete could remonstrate, Karen skipped over to the couple and caroled merrily, "Won't you have a pretzel? You look hungry!"

"I should be charmed, indeed," said a familiar voice, as the figure in the shadows straightened. "You are most thoughtful, Miss Long."

It was Joe Pendleton!

Karen and Pete danced off down the street, thoroughly embarrassed. They ate the rest of the pretzels themselves.

Karen was seated at her long work table, her bright head bent low over a rack of test tubes. At her right, gas from a Bunsen burner flamed high and at her left was a second test tube rack filled with cotton-stoppered glass tubes containing media. She was transferring cultures of bacteria for her tomorrow's experiment and was so intent on her work that she looked up with a start when Dr. Jordan, the house officer, spoke to her.

"Is Maggie about?" he asked.

"Miss O'Hara is away today, Dr. Jordan. Is there something I can do for you?"

He hesitated and then said, "Perhaps you can help me. I've rigged up a new apparatus on the ward—a method of running continuous bladder irrigations—and I'd like some bacteriologic studies made of the solution we're using."

"Let's consult the boss and see what she suggests." Karen expertly sterilized the platinum loop with which she had been making her transfers, turned down the gas flame, marked with a glass pencil the cotton-stoppered test tube she had been inoculating, and neatly stacked it in the rack with half a dozen others.

"Nice work," commented Dr. Jordan, admiringly. "Can you remember how clumsy you felt the first day you handled bacteriological material?"

"I certainly can," replied Karen. "I was afraid that I would drop something, and my fingers were all thumbs. Inoculating one tube was awkward, then, but now I can hold several tubes, inoculate them one after another and

think nothing of it. I'm not afraid of contaminating my cultures, and I'm not afraid of dropping my glassware, but I still have a healthy respect for the material I'm working with."

"I should say so! None of us can afford to be careless, especially since there is obvious danger from bacteria known to cause certain diseases. It looks as if we were just beginning to learn about the transmission of infectious diseases, however. We know very little."

"Right," agreed Karen, with a shake of her head, "but we are learning fast. Textbooks are out of date in two years. Makes it expensive for everybody!"

"In a way, it's more exciting to be working when much medical research is being done, although the pioneer days of medicine were interesting, too. My grandfather was a doctor in a little village and he didn't add to his medical library in ten years, I know. In fact, I don't think he ever consulted the books he had. I suppose he learned what he needed to know from his experiences with patients. He would have regarded special tests done by trained technicians as sheer luxury. As for the sulfonamides! He'd probably think the results were miraculous. Of course, the discovery of their usefulness is regarded as one of the great advances in medicine, and the results we get sometimes are miraculous. We need the work of the technicians, particularly, when we work with powerful drugs, however, for we must know by the examination of specimens whether we are using the proper dosage, as well as whether or not the infection from which the

patient is suffering is subsiding. You laboratory workers have earned your place in medicine through chemical as well as bacteriological studies."

"Thank you, sir, for your pretty speech," responded Karen, with a little bow. "I want the work I do to be of value to someone. I should hate to work just for the sake of being busy. Let's call on the boss!"

They knocked at Miss Johnson's door and were cordially welcomed. Her room was a pleasant place for a conference. Miss Johnson sat behind a big flat-topped desk. Typewriter, signed photographs, scientific periodicals, reference cards, and a variety of miscellaneous articles were scattered over the top. Her guests took chairs facing her and Dr. Jordan stated his problem.

Karen noted the light striking softly across Miss Johnson's face. She was most attractive; such nice eyes and such an intelligent, mobile face. Recalling how kind she was to everyone and how she was always ready to listen and help, Karen thought, "I'm glad I'm working with her. I want Mother to come to Baltimore right away. They would like each other." She pulled herself back to the discussion.

Dr. Jordan was saying: "And what solution do you think we should use?"

"I should like you to try a weak solution of Merthiolate," answered Miss Johnson, "and Karen and I can come down on the ward to test it, if you like."

"I can have the intern bring the specimens to the lab, which will make it easier for you," Dr. Jordan suggested.

"Very well. I will give Karen the setup and she will be able to tell you very soon about the efficiency of your human irrigation system."

"Thanks so much, Miss Johnson. You are a trump," declared Dr. Jordan as he left the office.

Karen returned to her transfers but was soon interrupted again.

"You wouldn't have any pretzels today, ma'am?" The unabashed Joe walked in with a culture tube in his hand.

"Not today. Must you remind me of my sins when I am doing experiments? How can I judge my results with the proper impersonal attitude?"

"Judging from your results the other night, you certainly drop your impersonal attitude when you leave your experiments. What are you doing Friday night?"

"I am going to wire my mother tonight and tell her I want her to come to visit me this week end. I haven't seen her in months and it's time she came to Baltimore."

"A-ha. Penitence for pretzels, I'll bet. Is she a nice mother?"

"Probably the nicest in the world. I have no complaints."

"I like mothers. If she comes Friday, let's all go to the movies Saturday. If she can't come till Saturday, let's you and I go to a movie Friday. In the meantime, would you mind very much culturing this specimen for me?"

9

A DISTINGUISHED GUEST

The telegrams exchanged between Yorktown and Baltimore were satisfactory to both parties concerned. Friday, one o'clock, found Karen at the Baltimore and Ohio Station, awaiting the Royal Blue, crack train from New York. The station was much less crowded and seemingly less commercial than the Pennsylvania Station. To Karen's amazement, there were rocking chairs in the waiting room! When the Royal Blue was announced, there was a sudden bustle of activity, but it was feeble beside the fury common to most stations. As Karen went through the gate, the sight of her mother emerging from the dismounting throng and walking toward her beside the long line of gray cars was as thrilling as anything that had happened to her in Baltimore. She couldn't get to her fast enough. It was well that Mrs. Long was prepared for the onslaught, for she was practically taken off her feet.

"Mother, I thought I couldn't live without you for another day!"

"Darling, I'm so glad to be here! What do you want me to do with my bag?"

"I thought we'd have some lunch at a restaurant on Charles Street and then go across to the Hospital. Miss

Johnson said that I could take the afternoon off, but I should like to show you the lab, and have you meet the people there. They have all been wonderful to me, and I am having such fun. We'll get a cab to take us to Hasslingers."

Mrs. Long laughed reminiscently as they walked out to the cab stand. "The same oval! Mount Royal Station hasn't changed in years!"

"Mother, there are rocking chairs in the waiting room —in the main waiting room!"

"It's the only waiting room the station has, unless it's been changed. I'll tell you a story about the station when we get settled. Tell the driver where you want to go, dear," she added, since Karen seemed unable to tear her eyes from her mother's face.

After Karen had directed the cabby, her mother said: "Look at me, baby. Are you all right? Is there anything the matter? This demand for a visit was rather short notice."

"Not a thing, Mother, as far as I know. I'm happy and crazy about my job, but I felt somehow that I had to have you here for a little while to make everything complete. You don't mind, do you?"

Karen was honest, and her mother's doubts were dispelled. "Darling, I'm delighted to come! But I wanted to be sure that there were no immediate problems to be solved before I relaxed. Now, I'm on vacation!"

They lunched beside a mural of earnest oystermen ronging for Chesapeake Bay oysters, and after they had

taken a few minutes to renew their acquaintance, Karen said: "Mother, you were going to tell me a story about the Royal Blue or the B. and O. station—which was it?"

"Both, really." Her mother chuckled. "The last time I was in Baltimore was almost ten years ago and I was staying with the Barrows, who were living then about five miles from the center of Baltimore. I left with Ed, when he came to work in the morning, planning to return to New York on this same Royal Blue, which was scheduled to leave late in the afternoon. It was their maid's afternoon off, and Georgia Barrow had asked Ed to bring meat home for dinner. At the station, there was quite a crowd, and Ed insisted on putting my bag on the train. There was a tie up, somehow, and before we knew it, the train had started, was in the tunnel, and the first stop was Wilmington! There was nothing to do about it. Ed was on the Royal Blue, Georgia's dinner was in the car at the station, and there was no way to get word to her!"

"How awful!" exclaimed Karen. "How in the world did he get home?"

"He asked the porter to wire Georgia from Wilmington. When we reached there he found that the other railroad had a train returning to Baltimore in about three minutes, so he rushed across and caught that. I think he got home about nine o'clock, and arrived at practically the same time as his telegram! Seeing the old station again reminded me of that episode. I can still see the expression on Ed's face when he realized that Georgia's dinner was in his automobile and that he was heading away from it

at about sixty miles an hour!"

They laughed together; then Mrs. Long said: "Tell me more about yourself and the lab." Karen chattered and Mrs. Long was much interested, as well as reassured.

After lunch, they took a cab to the Hospital, and entered the foyer of the main building. "The figure of Christ must be a great comfort to many of the sick who come through these halls, Karen," Mrs. Long said, as they looked at the statue. "You know, a duplicate of this figure stands in a long room in the Thorvaldsen Museum in Copenhagen. On each side of it are figures of the Disciples. I was greatly impressed by the grandeur of the group when I saw it in Denmark, but the figure of Christ seems much more personal, however, in this small circular hall. It seems definitely sympathetic with human suffering. I think it must be a solace to hundreds of people."

On Brady Seven they were greeted with great enthusiasm. After a tremendous welcome from the staff, Mrs. Long was introduced to all the mice, guinea pigs, and rabbits.

"I'm pretty good at remembering names," she said, laughing, "but I was never introduced to whole populations before."

Miss Johnson invited Karen and her mother to lunch with her the following day and promised to come to tea at the apartment Sunday.

Karen was a bit anxious about her mother's reaction to the apartment. The girls had made it spick and span and Karen did want her mother to approve. A look

through the tiny rooms and Mrs. Long's sanction was wholehearted: "Darling, I think your house is most attractive!" Karen was delighted.

"You are to sleep in my bed, Mother. There is room for you to hang three dresses in the closet, but I'm glad you didn't bring a trunk."

"I have only two dresses, but I have a box of brownies. What do I do with those?"

"Wonderful! I will take them to the kitchen, but they won't stay there long. Goodness, but I'm glad to see you —and not only for the brownies, either."

Mary and Sara Jane came in after five with plans for a sumptuous repast, but they found that Mrs. Long and Karen had things well under control. Under new management, the dinner had a quality that made it the best meal they had had in a long time. At dinner they talked about cooking.

"Where did you learn to cook, Mrs. Long?" asked Sara Jane.

"My husband taught me, Sara Jane," replied Mrs. Long. "We lived in two little rooms that were not fitted for cooking, and as we were both working, we hadn't planned to cook. There was a gas connection, though, and one Saturday afternoon we went to a local department store and bought ourselves a two-burner stove and an enamel tray to keep it on. When we brought it home, we found that the only way we could keep it out of sight was to slide it under the bed! That didn't bother us. We

went to market that night and bought pancake flour, butter, milk, eggs, syrup, little sausages, and coffee. Then we purchased a coffee pot, a frying pan, three plates, two cups and two sets of ten cent store silver. No two people ever enjoyed Sunday breakfast more. Having solved that problem, it began to be a game as to how many different foods we could cook for a dinner. With conditions limited as they were, we were amazed to discover that the possibilities were practically unlimited. Probably the food wasn't as delicious as we thought, but it was certainly appreciated. We even began to ask our friends for two-burner meals. I think our guests came out of curiosity first, but they always liked second invitations!"

Mrs. Long and the girls lingered over their coffee, talking about clothes, the war and the Hospital. A little later Elsa came in, cool and beautiful in a white evening dress. She was followed by a young man, handsome in correct evening attire.

"I'm sorry that we are so dressed up, Mrs. Long, but we are going to a party. Party or not, I couldn't have you in town one night without seeing you! I haven't talked with these girls in weeks. Wasn't Mary wicked to capture Jack? I've known him much longer than she has and I couldn't get to first base with him. Don't be emotional, Mary. I'm only teasing you! What have you heard from him?"

Jack's activities were discussed while the girls washed the dishes, and Elsa, relegated to the sidelines because of

her dress, asked: "Have dinner with me, Sunday, won't you, Mrs. Long? Karen, have you tied your mother in knots?"

"I shall shortly have to keep a date book for that popular person," Karen declared. "Lunch with Miss Johnson tomorrow; later, a ride in the country with Miss O'Hara; a movie with Joe tomorrow night; Elsa having dinner Sunday and the whole crowd here for tea Sunday afternoon! Madam, when do you think it will be necessary to return to your home?"

"It so happens, my infant, that I have arranged for a conference in Washington at eleven o'clock Monday morning, so if it suits you, I shall leave here Monday morning," answered Mrs. Long.

"What are you going to do in Washington?" questioned Karen.

"Linoleum business, my sweet."

"Oh—one of those—well, couldn't you stop here Monday afternoon, pick up your bag and have dinner with us?" her daughter asked, a trifle wistfully.

"I think it will be better if I go straight through, dear. My schedule will be uncertain and I don't want to cut into your time. You have your work to do and Miss Johnson was very kind to let you have this afternoon to run around with me."

"Right, as usual, Mother," Karen agreed. "I think we shall consider your calendar filled. We could probably throw in some sightseeing, but I think that Miss O'Hara's ride in the country will be more fun."

"I think the program is strenuous enough."

The evening passed quickly. Saturday morning was the usual routine. Miss Johnson, Miss O'Hara, Mrs. Long, and Karen had lunch at the stately Faculty Club on the campus of the University. After lunch, Miss O'Hara drove them through the beautiful valleys north of Baltimore, and they were enchanted with the golden autumn coloring of the lovely countryside.

The gas street lights were gleaming softly as the car came back into the city.

"We have electric lights on Broadway," said Karen. "We're quite cosmopolitan!"

After supper, Joe arrived. He announced that he needed help.

"I had a call to examine a patient this afternoon, and found she was a problem for the psychiatric clinic. Before I was sure of it, however, she propounded a question that has me buffaloed," he declared. "Maybe you, Mrs. Long, or one of you bright young things can tell me whether it is a problem in deduction or whether it's foolishness. She said that a gentleman was trying to hire an employee for an important position and couldn't decide among three. Finally, he blindfolded the trio and announced that he was painting either a black or white cross on the forehead of each applicant. In fact, he painted a black cross on each of the three. He seated them at a table, with orders that, as soon as the bandage was removed, they were each to begin tapping if they

saw at least one black cross and continue tapping until someone had decided what color cross he bore on his own forehead. Finally, one applicant stopped, saying that the cross on his own forehead was black. The patient asked me how he knew and would I please tell her as soon as I found out. Now I don't know whether she or I belong in the Phipps Clinic!"

They all held their heads in profound silence until Karen, jumping up, said, "If we are going to a movie, let's go! The solution of this masterpiece may take days!"

Off they went to see *Sergeant York*. Halfway through the news reel, Mrs. Long suddenly whispered loudly: "I have it! It's a problem in deduction!"

"What is?" asked Joe, blankly.

"The white or black cross story!"

After the movie, Joe took them to a "raw bar" where they ate succulent Chincoteague oysters, plump and delicious. Mrs. Long refused to divulge the solution of the story, saying that Karen and Joe were intelligent young people and should be able to deduce the correct answer. It's a question as to whether they ever solved it!

Sunday was another beautiful day and Mary was up early with a good suggestion. "Let's go down to Federal Hill this morning! There won't be any traffic on the river, but I think the view is one of the most fascinating in Baltimore."

The idea was received with acclaim and the three girls and Mrs. Long went off for a look at the Basin.

Around the little park that occupies the Hill runs a walk, with benches here and there for those who wish to contemplate the water and boats. On one side the high buildings of the city towered above the water and the old wooden wharves; on the other side was the channel to the Bay and dry docks filled with rusty, weather-beaten veterans of the sea.

"How charming!" exclaimed Mrs. Long. "It's characteristically Baltimore!"

"Boats go to Norfolk every night from the wharves across the Basin," explained Sara Jane. "We planned all summer to go to Virginia Beach for a week end by way of the Chesapeake Bay steamer, but we never got there. Maybe we can go next year. Wouldn't it be fun?"

"You go down at night, don't you?" asked Mrs. Long, watching a little fishing boat moving toward the Bay.

"Yes—to Norfolk. Then you take the bus to Virginia Beach," answered Sara Jane.

"Doesn't it sound wonderful, Mother? Girls, let's be sure to put it on our list for spring!"

They tore themselves reluctantly from the water front. Karen and Mrs. Long took a cab to North Baltimore, while Sara Jane and Mary went home to make sandwiches for the afternoon guests.

"Don't work too hard, girls," admonished Mrs. Long. "Remember, you want to be able to enjoy your company."

"We won't overdo, thank you," replied Mary, "but some things have to be hidden under the bed or people

won't be able to walk about. 'Bye!"

"Karen, I am having a delightful visit," declared Mrs. Long as the cab took them up Charles Street. "Lunch yesterday at that beautiful Hopkins Club—it's like a gem—the ride, and then this trip today! I think the way we have seen the city is surprising—thanks to your friends. You are a fortunate person and I am fortunate to be not only your mother, but also your guest."

"You are a dear," answered Karen, giving her a squeeze, "and I'm very glad you came. You are quite as elegant a guest as you are a mother and that's saying something."

The cab stopped at the spacious apartment house where Elsa lived and they entered the dignified hallway.

Mrs. Long looked amused. "It is rather a contrast to your humble dwelling, isn't it? But just as your establishment suits you, Elsa's suits her."

They were announced by the desk clerk. When they reached Elsa's entrance and she opened her door, a short-haired cat ran out and down the hall.

"I'm terribly sorry," cried Elsa. "The monkey was out of the door before I knew it! Just a minute." She scooped the cat up in her arms and ushered her guests into her tiny hallway. "Chinky is my latest acquisition!"

"What in the world—" began Karen, "Oh, I see! A Siamese cat! Isn't he handsome?"

His long lean body was a beautiful fawn color, his ears, mask and feet were dense seal brown and his slanting eyes were deep blue. As he jumped from Elsa's arms he waved

proudly his graceful whip tail, dense brown as his feet. This was no common cat.

"Isn't he a lovely thing?" asked Elsa, gazing at him admiringly. "But noisy—and naughty! He tries to run out the door every chance he gets—and not because he has ideas of going places—it's just a game to make me chase him. He talks entirely too much and his voice is not as beautiful as he is, but he's learning now not to try to out-talk my guests."

"Your apartment is a perfect setting for you, and the cat is in harmony with his surroundings, too. What's his name?" questioned Mrs. Long.

"He's called 'Captain Chinky' and knows his name, particularly when he has been scratching the furniture. I speak to him sternly and he cowers as if he thinks he can hide right in the middle of the floor!"

They chatted for a while and then went to the dining room for dinner. This also was in decided contrast to the informal dinners in the Broadway apartment. Elsa was a charming hostess, clad in a smart black dress. Mrs. Long and Karen enjoyed their visit with her and "Captain Chinky."

Later all but the Captain traveled over to Broadway —where there were guests to be received.

"Who is coming, Karen?" questioned Elsa, as they rode across town.

"I think you know everyone except Miss Johnson, Miss O'Hara, and the Browns," Karen answered.

"You had better straighten me out, too," suggested

Mrs. Long. "I don't want to make any mistakes in using wrong titles!"

"It won't make any difference, Mother. Let's see. Miss Johnson, Miss O'Hara, and Janet from our lab; Sue Clark, who is working at the School of Hygiene; Mary McLane from the autopsy lab; Clara Jordan from Harriet Lane; Norma Cloud from the blood-bank; Helen Jackson from Medicine. Then there are the Browns, who are both doctors, besides Joe, Jack Shaw, and Bill Moore, interns. Pete and George Billings are medical students. Oh, and Dr. Butler is coming, too, I think. He's the chemist in our laboratory and very brilliant. You don't know him, Elsa."

"It sounds like quite a representative group, doesn't it, Elsa? You and I will represent the laity in the apartment this afternoon. I hope they don't talk over our heads all the time!"

"From my experiences with the Hopkins people, which is since Karen has come to town, I find that they are able to talk with a lowly mortal without making said mortal feel like an ant," Elsa assured her. "It's a little different with some of the students at Homewood. I dated a graduate student in higher mathematics one night and he read me the dissertation he was offering for his degree!"

"Elsa, you're kidding," Karen protested.

"Not one bit of it. It's the truth. I admit he didn't get through it, but my word, what an evening! Here we are. I pay this tariff."

They trudged up the stairs and were greeted by Mary and Sara Jane. The kitchen was full of sandwiches and small cakes.

"I hope everyone doesn't arrive at the same time," said Mary. "We can't handle many."

"I don't think they will," responded Karen. "Of course it's informal, and some few will probably stay until they are put out."

"Here's someone now. And three more below," called Elsa from the window.

The rooms filled quickly and there was laughter and pert comment. The girls looked smart and chic in their fall clothes. Little groups formed in corners and many discussions went on simultaneously, but a dark thread appeared continuously in the pattern of the discourse; "How soon will there be war? What will be our roles?" The choruses of Euripides were no more foreboding.

The older guests left early but the younger ones stayed long into the evening and then seemed loath to go.

"It was a lovely party, girls," said Mrs. Long, as ash trays were being emptied and the dishes washed. "Your friends treated me like a contemporary and that is about the highest compliment I can be paid."

"They are all very nice," added Elsa. "Hopkins has a fine group of people and the girls in # 3 have picked interesting friends."

10

WORK AND PLAY

Mrs. Long departed the morning following and Karen was content to settle down to her studies and protocols. The experiments were moving along and Miss Johnson seemed pleased with the results. Karen and Janet went to the National Symphony Concert and heard the First Symphony of Sibelius. A week later Karen and Joe bought standing room for the Philadelphia Symphony Concert and sat on the floor for the Shostakovitch Fifth. The standees consisted almost entirely of medical students and Hospital people. Joe rightly said it was like "old home" week. Afterwards there were sessions at the apartment: the war, contemporary music, administration of the Hospital. All subjects were discussed freely and often fiercely.

Thanksgiving morning the girls went to church and late in the afternoon ate oysters, Smithfield ham and turkey with Sue Clark and her aunt. Sue's brother and cousin had come down from Princeton for the holiday, but they seemed mere infants to these young ladies of the scientific world who had been graduated but a year or so before. Things moved rather slowly until they all began to play pingpong. The boys gave the girls such a

drubbing that the girls forgot the boys seemed young.

Sara Jane had given up her work in the Allergy Clinic and was devoting her full time to her studies at the School of Hygiene. Mary was occupied from eight till three with the technical work of the Dispensary. She recorded results for the study of basal metabolism in the mornings and in the afternoon ran tests of liver and kidney function. She also made reports on blood smears. Susan was thrilled by her work with Dr. Phair; they seemed to be getting some unexpected results. Karen was studying Biostatistics. The girls were busy and tremendously interested in their own problems and in those of the others, as well.

Miss Johnson had practically concluded the study of the new drug. From the bacteriologic point of view the results had been excellent. The experiments had been done carefully and Karen was proud of the neat tables she had made showing results in different lots of mice with specific amounts of drug. The preliminary report was sent off and the staff waited eagerly for further word concerning the product.

One day, Miss Johnson came in with a letter in her hand. "Karen, I hate to show you this. We put in some good work on that drug, and I had hoped that because it was your first work, that the results might be of value. It's a shame, but the manufacturer writes that the drug has been found to have a dangerous effect on the nerve endings of dogs, and because of this, they hesitate to try it on humans. They won't make any more of it."

Karen saw that Miss Johnson was as disappointed as she was, so she said, resignedly, "What a shame! But aren't you glad that they tried it on animals before giving it to a person? Don't mind about me. I know we have to take disappointments like that in our stride. I learned a lot from that study, and maybe we'll get something that will help people—and dogs—next time!"

11

WAR

"Boo!"

"Boo yourself, Joe Pendleton. Now go away and don't bother me. I'm making dilutions!"

Not another word was heard, but before the young man left the lab, he wrote a long and involved letter, asking Karen to accompany him to the Walters Art Gallery the following Sunday afternoon. It seemed that there was a Renaissance exhibit on, and he "remained her faithful and obd'n't servant, etc., etc."

It was a date. What was surprising was that when Joe called for Karen, he conducted her into a snappy coupe in front of the apartment.

"Joe, where did this come from? Tell me all!"

"I stole it from a patient who insisted on keeping it in bed with him. There simply wasn't room to get around the car and infusion bottle, so I told him he would have to give it to me to keep for him."

"Don't be silly. Whose car is it?"

"Well, if you must know, it belongs to David Thompson, a fraternity brother who lives in the Valley and is taking calls on the ward today. Of course, if you object to riding in it, since you know it wasn't stolen—"

"Stop! And a radio! I haven't heard a thing, all day. This is luxury!"

The little car drew away from the curb and Joe switched on the radio. Some music; and then:

Special bulletin from the Associated Press: It has just been reported that our fleet lying at anchor in Pearl Harbor has been attacked by a squadron of Japanese aircraft. Please stand by.

They looked at each other in consternation. It was unbelievable and yet it had happened. The dark prophecies had been fulfilled. Their world changed in that minute. Outlines became sharper, life became more intense. Tears welled in Karen's eyes and Joe put his arm around her. To both of them came realization of love of country. Joe turned the car toward the serenity of the Green Spring Valley. What they said between news flashes was of no importance, but "spacious skies and amber waves of grain" had become infinitely precious realities, their survival of supreme importance, worthy of any sacrifice.

Karen, Mary, and Sara Jane walked out of their house Monday into a different world. Saturday, Monument Street had been an important highway for them; Monday it was unreal and unimportant. They parted at the Accident Door, and with serious faces, went their different ways.

Greetings on Brady Seven were quiet. The radio had already been turned on. Karen automatically lit her gas

burner and lifted her racks of test tubes from the incubator shelf, but her gestures seemed to have no meaning for her. Everything was unfamiliar.

Miss O'Hara, at the table across the room, pushed her microscope away impatiently. "Routine work must go on, I suppose," she said, "but I can't be bothered with it now. I'm concerned about Dr. Antonio. He's from Manila and all his family are there. Waiting for news will be agonizing."

Dr. Johnson and Dr. Butler walked into the lab. "It's horrible not to be able to do anything," said Dr. Johnson. "I hope that there is plenty of sulfanilamide for the wounded and burned at Pearl Harbor. Any late news, girls?"

"I trust that Washington is somewhat prepared for this emergency," declared Dr. Butler. "At any rate, we have been making a slight effort toward mobilization, in spite of the blindness of some Congressmen!"

"Several of our interns are in the Reserve and will leave immediately. I should think that the Hospital Unit would be one of the first to be called."

Karen thought: "I don't see how they can talk about it." She pushed her stool back and walked into the corridor. The sunshine, gleaming through the dusty glass at the other end, was far away. She heard footsteps on the stairs and then she saw Joe's figure silhouetted against the light. He was carrying a blood culture. "Hi, Karen!" was all he said as he passed her. She was grateful for his restraint.

Like hundreds of thousands of others throughout the country, Karen groped through that morning. At noon, like hundreds of thousands of others, Dr. Johnson, Dr. Butler, Miss O'Hara, Janet, and Karen pulled their chairs close to the little radio for the President's address. The atmosphere of unreality grew deeper.

"I ask that the Congress declare that since the unprovoked and dastardly attack by Japan on Sunday, December seventh, a state of war has existed between the United States and the Japanese Empire."

The country was at war. They rose for the playing of *The Star-Spangled Banner*.

Late in the afternoon Karen, after a hurried session with Sara Jane and Mary, slipped into Janet's laboratory.

"How about coming to the apartment for dinner, Janet?" she suggested.

"Thanks ever so much, Karen," answered Janet. "I'd love to. I don't feel like going home."

"I think I'll give Sue a call. She would probably like to stay over, too. We can stop at the A & P on the way and pick up an extra can or two. I'm cook. I have never felt less like cooking but you won't starve."

Karen returned to the bacteriologic laboratory and called Sue.

"Hello, Sue. How do you feel?"

"As if the bottom had dropped out of everything. Isn't it dreadful? And think of those Japanese representatives in Washington! They knew all the time what was com-

ing! Is there any late news from the West Coast?"

"Not that we know of. Come to dinner and spend the night, can you? We should love to have you."

"I'm awfully glad you called, Karen. I wanted so much to call you and ask if I might come over, and then thought that perhaps you all had other plans."

"See you later. Good-bye."

Karen scarcely had the receiver on the hook when the phone rang. "Brady Seven," she said, automatically. "Hello, Pete. . . . I feel just about the way you sound. . . . Surely. . . . Come to dinner, if you can. There won't be much, but Janet and Sue are coming. . . . Not at all. . . . As close to seven as you can make it. 'Bye."

"Looks as if you are having a gathering of the clan, Karen," commented Miss O'Hara.

"I think we should get together, Miss O'Hara. Somehow, I think we need each other."

"You are perfectly right, Karen. There is much for groups of young people to discuss today. What a mess our world is going to be when the war is over!"

"Perhaps this generation can accomplish a permanent peace program," replied Karen, optimistically. "Right now, it looks as if we have enough in the present to keep us busy."

"Let's turn on the radio."

At the sound of the news report, Dr. Johnson came in from her office. "I can't work," she said. "Where's the New York *Times?*"

There seemed to be no news that had not been reported

the previous hour, and Dr. Johnson's perusal of the paper apparently brought her no satisfaction. "Every news item seems out of date in two hours," she complained. "We are certainly spoiled. How did we get along in the last war without radios? It seems incredible. Ladies, I move we adjourn. Come on home, Maggie. You won't have anything further to culture this afternoon, and I know I can't accomplish anything. Can't you go home, Karen? Or will you come to my house for dinner?"

"Thanks ever so much, Miss Johnson, but Janet and Sue are coming over. I'm waiting for Janet to finish the blood urea determination she is running and then we'll go along. I'll see that everything is locked up."

Dr. Johnson and Miss O'Hara left, and Karen wandered back to Janet. She was sitting at a small table, stirring a solution with a glass rod. Karen idly watched her. From a long glass burette she drew a measured amount of liquid and added it to the quantity she had been stirring. With a drop bottle, she placed a series of drops in the hollows of a porcelain "spot plate" before her. To this she added a drop of the solution and looked at the combination intently. The result did not appear to be satisfactory. From the burette she added more of the liquid and repeated the process. Karen grew more interested. "The reading is a little above normal, isn't it?" she inquired.

"Yes. Here comes the end point." A brownish smudge had appeared when Janet combined the solutions. She calculated quickly on her pad. "Karen, call Dr. Winston

for me, please, and tell him Mr. Carter's blood urea is point four four. He asked to be called as soon as I had tested the blood. He thought Mr. Carter's kidneys were not functioning as well as they should be."

"Surely, I'll be glad to call him. Did you have many bloods to titrate today?"

"Just about as many as usual. It seems queer to me that there are any routine tests to be made today. People should stop being sick, stop going places, stop eating—but they don't. Life goes on at home, as well as in the Army!"

Karen and Janet left the lab shortly afterwards. Twilight and a smoky fog had descended on the city. The girls noticed yellow lights gleaming from many windows. "I wonder if the people in those houses are feeling as baffled as we are," thought Karen.

Janet answered the unspoken thought. "There must be many upset people in those houses," she said, nodding at the red brick, white-stepped dwellings. "It seems so strange that the attack came as it did. I never really thought it would."

"I wonder if the Japs can attack the West Coast," said Karen. "Anything is likely to happen now."

They shopped for canned beans, corned beef, applesauce and potato chips.

"The Army will take our canned foods soon, Miss," said the clerk. "You had better stock up while you can."

"You mean that we won't be able to buy foods in

cans?" asked Karen in amazement. "Why, I've always been able to buy things like this, in an emergency. What would we eat?"

"I don't think we shall starve—for a while," answered the clerk, with a smile. "But we are going to have to get along on a sight less canned goods than we do now."

"It's going to be very queer, but I am sure that there will be other changes, just as queer," said Janet.

They arrived at the apartment and found Mary already there.

"Mary," said Karen, reprovingly, "you've been weeping!"

Two tears rolled down Mary's face. "I couldn't help it," she sobbed. "Jack sent me a ridiculous telegram, meaning that I was to keep my chin up. If he hadn't done it, I would have been all right, but I'm glad he did anyway."

"You are too silly for words," said Karen, kissing her. "Bear up, some way or another. Pete's coming for supper, too, and you can't mope with the house full of people. How about powdering your nose? You're a sight. Do something with her, Janet, and then please get the paper plates for me."

Pete, Sara Jane, and Sue arrived together.

"Hi! Any late news?"

"There's Mr. Gasser calling," said Sara Jane. "I'll go. Tell him I'll be right down, Pete."

Sara Jane returned shortly. "It was Elsa. She's coming over this evening. Is Joe coming, Karen?"

"I don't know; I saw him for only a minute today."

"Did you ask about Joe?" called Mary, from the other room. "I saw him in the Hospital when I was leaving and he asked what we were doing tonight. I told him Janet and Sue were coming for supper—I didn't know about Pete—and he said he'd probably drop in sometime during the evening."

The aroma of beans and coffee made everyone hungry. They cleaned their plates in short order and were back for seconds.

"The grocery clerk said we'd better lay in a supply of cans," commented Karen, as she served the steaming beans again.

"Why?" asked Mary. "We haven't much storage space."

"I suppose there will be fewer supplies for civilians when there is a large army to feed."

"Tin will be needed for armaments," said Pete.

"Food will be sent great distances," added Sara Jane.

"Maybe workers in canneries will be needed for war work," suggested Janet.

"Somehow, I never thought there might be shortages of things," said Mary.

"We've never had total war before, Mary. There are going to be lots of changes, and not only in food. I understand the Medical School terms will be changed so that the boys may be graduated earlier."

"Really, Pete?" asked Karen.

"So they say. No summer vacation, I shall be interning

then, so it won't make any difference to me, but it's going to be a long session for the next class."

"Will that mean graduation in the middle of the year? How odd!"

"I wonder what will be done about their tuition," said Sara Jane. "Lots of them pay part of it with money they earn working in hospitals and summer camps."

"Gosh, I don't know," answered Pete. "And won't summer camps suffer without medical students and college boys?"

Sara Jane, Sue, and Janet washed the cups and glasses. Mary curled up in a corner of the day bed to write to Jack. Pete, sitting close to the radio, read the paper. Karen felt as if she were in a dream. Things were the same, and yet everything seemed different.

The doorbell announced Elsa. Joe arrived fifteen minutes later.

"I wonder why we are so shocked," said Sara Jane, between news broadcasts. "We knew it was coming. Do you think we hoped it wouldn't happen?"

"Foolish question," answered Pete. "Nobody knows. What are you going to do, Joe? I won't be of any use to the Army until I graduate."

"I think I can go with the Hopkins Unit," said Joe. "I am going to talk with Dr. Finney again."

"With the Unit?" repeated Karen, uncomprehending. "Why you are only—" she was being stupid. Of course he should go with the Unit. She hadn't realized that the war would bring a personal loss to her.

"Joe, do you know whether technicians are going with the Unit?" asked Sue.

"Someone will have to do technical work—the doctors won't have time. I don't see why women won't be taken for those jobs. But, Sue, you couldn't take a job with the Unit. With the training you have had this year, you will be needed right where you are. After all, epidemics of meningitis have always occurred during periods of war. You will be busy helping clinicians diagnose cases by identifying organisms."

"I wasn't thinking about myself, for I think I can be more useful where I am. Plans are being made now to send units into camps for research work, and that is probably as far afield as I shall travel. But wouldn't going with the Hopkins Unit be fun? Karen, couldn't you and Mary go? Sara Jane will have to wait until she gets her degree in June."

"I don't know," said Mary. "I'm all mixed up. How about you, Karen?"

"I feel the same way. I want to do something and get going, but what? As a matter of fact, my year with Dr. Johnson won't be over till July."

"I wish I had your technical training!" burst out Elsa. "The best thing I could do was to register for the Motor Corps!"

"Heck, Elsa, that work is as important as anything we could do," said Joe. "What with the Atlantic as narrow as it is now, I'll bet Mr. Hitler's boys will try to get over for a crack at Glenn Martin's before long. And the Hos-

pitals and the Red Cross will have their hands full if the Nazis make the grade! Let's get some air and a coke! We can't get into any action tonight and as far as plans go, Uncle Sam will use us where he wants us when he wants us. I'm fed up with the radio except for news reports. I've never heard so much radio in my life as I've heard in the past twenty-four hours."

They felt a little better. As they put on their coats, it was reassuring to think that they were going to the corner store for cokes, as they had done so many times before.

∘ ∘ 12 ∘ ∘

MERRY CHRISTMAS

Christmas season was approaching, but it was unlike any previous Christmas time. Stories of the damage at Pearl Harbor were confusing, but at least the Hawaiian Islands had not been invaded. The Philippine situation was desperate; the news in general was not encouraging. Troops and ships were moving but it seemed to take too long to get activities under way.

Sara Jane had gone home for a three weeks' vacation and Mary planned to spend Christmas Day with Karen in Yorkville. A few days before the holiday, Mary and Karen were in the market where the vendors had set up their stocks of Christmas trees. Holly wreaths and red paper flowers made the stalls gay and the girls could not resist the holiday spirit.

"Let's get a tree for the apartment," suggested Mary. "We should look a bit festive. We could buy a few icicles and trimmings at the dime store. There is always a tree in the Dispensary, and on most of the wards of the Hospital, I think!"

"That's a swell idea! We might even buy a wreath of holly for our door, and a red ribbon to tie on it. You know, no one has said much about Christmas on Brady

Seven, but I think that a little tree on Miss O'Hara's desk would cheer the ladies no end. I'm going to buy one, and a box of icicles for it. I'm sure that they wouldn't mind."

They went over the trees critically and finally decided on two they thought most appropriate. The vendor put their selections to one side and the girls braved the crowds in the ten cent store in order to buy ornaments. Of course, they bought more articles than they had intended, and by the time they had retrieved their trees and holly, both girls were laden down. They struggled home and arrived there exhausted, but pleased with themselves.

"Let's go downtown, have dinner, then come home and decorate," suggested Karen. "This evening I prefer looking at food someone else has cooked and there is plenty of money in the till."

"O.K.," agreed Mary. "But I have to change my shoes if I am going to wear my brown coat. It won't take me a minute."

"That means a shift in handbags," admonished Karen.

"You would insist on matching accessories," sighed Mary. But she announced in a very few minutes, "It's done. I'm ready."

The girls boarded the bus and went downtown to their favorite restaurant. They ate leisurely, and more expensively than usual, watching with enjoyment the different types of people who were dining there. Both Karen and Mary felt much refreshed as they rose to go. Karen left the tip and sauntered over to pay the bill. Mary stood behind her, thinking how trim Karen looked in her smart

black coat and hat.

Karen opened her bag, brought out her billfold, and extracted her sole remaining bill. She looked at it carelessly and her serene expression changed to one of horror. It was a one dollar bill!

"Mary," she gasped, "have you any money? I thought I had a five dollar bill and it is a one!"

"I haven't very much—I left all my money except change in my other bag," said Mary. "The check is two dollars and fifty cents. If I can slide back and get that quarter you left for the waitress, we can make it!"

She walked quickly to the table, but the cloth had already been removed. "Have you lost something, Miss?" inquired the waitress courteously.

"Oh, no, thank you," answered Mary, hastily. One desperate glance around the room and she saw a possible solution. She motioned to the now thoroughly embarrassed Karen.

At a side table sat two elderly nurses whom Mary knew slightly. She went over to them. "Good evening," she said, "could you help Karen Long and me out of great trouble?"

The women looked startled. "What's the matter, Miss Wells?" one asked.

"We are short twenty-five cents to pay for our dinner and twenty more to take us home on the bus," explained Mary. "Could you possibly lend me fifty cents?"

The two nurses burst out laughing. "I thought that with such a serious face you really were in trouble," said

one of them. "I don't think you would have been put in jail for not being able to pay your bill. Are you sure that fifty cents is all you need?"

"That's all, and I hope that we shall never need fifty dollars any more than we needed the fifty cents. Thanks very much. I will return it tomorrow."

The women were much amused, and Mary was a little annoyed.

"I don't see why it was so terribly funny," she said, as she and Karen waited for the bus. "My heart was in my boots. Imagine having to explain to the proprietor that we had no money for our dinner!"

"I would just as soon have not," admitted Karen, "but I think we could have made some arrangement about it. Situations like that must happen to plenty of people."

"I still don't think it was funny," continued Mary. "I'm not going to pay back the fifty cents until day after tomorrow."

"Don't be silly," admonished Karen, "and don't get upset about someone's laughing at you."

With her usual buoyancy, Mary shortly forgot her annoyance. They were soon back at the apartment, happily unwrapping their purchases of the afternoon. Holly was placed over the pictures and the wreath, with a huge red bow, decorated the door. A piece of mistletoe hung in the doorway.

Karen was throwing icicles on the tree when Joe came in.

"Aren't you something to have done all this?" He gazed about in admiration. "I know of a contribution I can make!" He rushed down the stairs, and in ten minutes he returned, a trifle breathlessly, with a dozen candy canes.

"There! That completes the decorations! We should ask Dr. Schultz's apes to come over. Guy Smith told me that one time they escaped from their cages just before the holidays and found someone's traveling bag filled with Christmas presents of candy! They had a Merry Christmas, if no one else had."

"Merry Christmas for apes and small children! Now wouldn't that be a lovely Christmas card? It's just about the way I feel—oh, well, there is no use pulling a long face—it has to be gone through with. Let's sing a Christmas carol and eat a candy cane, just to prove to Mr. Hitler that he can't spoil everything!"

They sang *We Three Kings* with great spirit.

Karen walked to the Hospital the following morning, bearing in her arms the little Christmas tree. Brady Seven greeted it with acclaim.

"How nice!" cried Dr. Johnson. "Is it for us, Karen? What an inspired idea!"

"I think it's lovely, Karen," added Miss O'Hara, warmly. "No one ever bought a tree for the lab before. It's exactly what we need."

Dr. Butler and Janet contributed words of praise.

When Joe furnished more candy canes, it was further admired, and gallantly bore witness for Peace and Good Will in an unheeding world.

The girls left for Yorkville on Christmas Eve, carrying with them small gifts and a host of good wishes from various members of the staff. The usual holiday crowds filled Pennsylvania Station, but there had never been so many men in uniform before. As the girls struggled down the stairs, a troop train went by, with hundreds of cheerful faces calling holiday greetings to the multitude on the platform.

"I wonder where those soldiers are going," said Karen, after they had settled themselves in the last vacant seat in the car.

"I wonder, too," answered Mary. "Did I mention that I didn't hear from Jack this morning?"

"Only three times. Need I tell you again that the Christmas rush delayed the mail?"

"You're sure they wouldn't send him away without giving him a chance to let me know?"

"Positive, for the third time."

"Very well, I shall subside, but I keep thinking about the ghastly yarn Jack's mother told us about her brother, Mr. Brown. He was with a Baltimore company in the last war. They trained in Alabama and were sent to New York to prepare for embarkation. The families of some of the men went there to say good-bye; they had been told that the troops were leaving soon. A few days later the

company was put aboard a ship and left the port. They went to sea, but in a few days found themselves landlocked again—and the land was familiar! They were moving up the Chesapeake Bay! The ship docked at the Canton ship yards here and remained for three days. Mr. Brown and one of his friends gave a little boy some money to call their parents—of course, they couldn't leave ship—and the little boy did call. The parents wouldn't believe him. Having seen their sons off in New York, they thought the call came from a spy seeking information and they didn't do anything about it. When the boat finally moved out to join the convoy at Norfolk, and passed along the Calvert County Cliffs, below Annapolis, there were some pretty disconsolate soldiers aboard."

"Wouldn't that be terrible?" exclaimed Karen. "The last look at familiar landmarks! It makes me sad to think of it, even if I am on my way to the old homestead."

She didn't look sad a few hours later when she kissed her mother.

What a delight it was, having walked the length of the familiar platform; having deposited Mother, packages and excited friend in the car; having responded to the frenzied welcome of a ridiculous dachshund occupying most of the front seat, to slide in behind the wheel, release the brake, turn on the ignition, step on the starter, push out the clutch, slip the car in gear, and feel it move easily away from the curb! Karen performed these tasks as if it were all a rite.

When the car was rolling swiftly forward, she gave a great sigh: "Mother, there is nothing to equal a Christmas Holiday at home!"

Candles in every window, holly wreaths on every door, lighted trees in every garden. "Aren't the decorations lovely?" cried Mary.

"I have never seen them more beautiful," Karen agreed.

"I'm always excited by the display of lights at Christmas," added Mrs. Long. "It's such a cheerful custom! I try to take a walk every night during the season, so that I can remember how gay and pretty it looked after the decorations have been taken down. Watch the turn in the driveway, Karen! There's Lucinda at the door, waiting for you!"

The house was ablaze with light and the doorway was filled by a portly maid, holding two large dogs in check. When the car stopped, the dogs came bounding down the steps in great excitement, mowing Karen down with their hearty welcome.

"Oh, you sweet things, I'm so glad to see you! Hello, Lucinda! Are you pleased to have your wandering child home again? This is Miss Wells, my roommate. Get down, Snip," to the English sheep dog, "you weigh a ton! Frigate!" to the other dog whose ancestry was less apparent but who was equally elephantine. "You must move from under my feet! Oh, but it's fun to be home!"

The dachshund, whose name was Noodle, moved quietly in and promptly went to sleep in front of the fire. The big dogs escorted Karen and Mary up the broad stair-

way. Mary exclaimed with delight at Karen's pretty room and was pleased to find that her room adjoined it. Porcelain and chromium gleamed in the bathroom; after months of old fashioned plumbing at 510 Broadway, the sparkle was positively thrilling.

"Lucinda won't have dinner ready for half an hour," said Mrs. Long. "Why don't you take showers and wear housecoats to dinner? If you didn't bring any, I'm sure I have two that will fit. We can go over to the club later, if you like. Will you both come with me to midnight services?"

"Would you like to go, Mary?" asked Karen. "It's a beautiful service and I love it."

"Of course," answered Mary. "It wouldn't be Christmas Eve without church service."

They reveled in the luxury of their baths, and a little later, looking very smart in the borrowed housecoats, joined Mrs. Long in the library. Lucinda served them cocktail glasses of chilled tomato juice and tiny hot biscuits spread with Smithfield ham. The phonograph was playing Christmas carols.

"My goodness, but we've come a long way from Baltimore," thought Mary.

Baltimore became even more remote at dinner. Glass, silver and carefully polished mahogany gleamed in the soft candlelight. Lucinda had provided Karen's favorite dinner, and babied her so that Mary scarcely recognized her independent and efficient roommate.

"Is there anyone special that you wanted us to see at the

club, Mother?" asked Karen, when they were having their coffee. "If there isn't, I'd just as soon stay here until it's time to go to church. Would you mind? You know, our holiday is short, and it may be ages before I can come home again."

"I'm delighted to stay home," declared Mrs. Long, "if it suits Mary and you. I thought perhaps you might like to go out—but staying home is excellent."

"Mrs. Long," said Mary, impulsively, when dinner was over, "would you and Karen mind if I played the piano for a while? I love to play, and it has been almost a year since I've touched a piano!"

"I didn't know you played, Mary," said Karen, astonished.

"I don't talk about it much," explained Mary, "because I miss the piano so when I think about it."

"Light the lamp for Mary, Karen," suggested Mrs. Long. "I'm glad to have you play. The piano hasn't much company these days."

Karen lit the lamp over the Steinway and then moved back into the shadows near her mother. Mary played a few chords and then began, very softly, to play Christmas carols and hymns. There was a directness in her playing that seemed to tell her hearers of her longing for her own home and yet reflected the pleasure she felt in being where she was. After a while she was playing simple love songs and old ballads that sang of absent sweethearts and prayers for safe returns. Some Debussy and some Beethoven followed, and Mrs. Long and Karen knew that the pianist

was oblivious of her audience. It was a unique experience to share Mary's thoughts as they were interpreted through the melody that poured from the Steinway.

The clock struck ten and Mary was recalled to her surroundings. "My goodness, I didn't mean to go on for so long! Karen, why didn't you stop me?"

"It was wonderful, Mary," said Karen, with a catch in her voice. "I never thought that you could play like that! You seem to be able to say just what you are feeling! It's a privilege to be able to express your moods through music as you can."

"It is, when I can find the piano and the mood," answered Mary, seriously. "The setup was perfect tonight. Thanks ever and ever so much."

"Thank you very much, dear," said Mrs. Long. "No one has ever played here as you have this evening. You have told us very convincingly that you are going to have a Merry Christmas tomorrow. Go up and dress, girls. The church may be crowded."

A few minutes later, Karen came into Mary's room bearing a long red stocking. "This is Mother's," she said, "and if we have time before we go to church, we might fill it—otherwise it can wait until we come home. I have your stocking in my room and Mother has mine. We must decorate the tree, too, you know—it's right small these days and isn't difficult."

They dressed quickly and wrapped sundry small packages for Mrs. Long's stocking: scotch tape, a typewriter eraser, a calendar, phonograph needles, darning cotton.

Then Mary went to Mrs. Long's room to add some things to Karen's stocking: measuring spoons (Karen's hand was heavy with the salt), safety pins, a cake of Yardley's soap, some Life Savers, and a remarkable pin from the five and ten cent store, announcing in flowing letters that it was a "Souvenir of Baltimore, Maryland." Mrs. Long had provided some War Savings Stamps, a gay little porcelain dog, some perfume, and a match box. Finally, the laughter came from Karen's room as Mrs. Long and Karen gleefully filled Mary's stocking. A handkerchief, a hair net, War Savings Stamps and postage stamps, sewing needles, some "bobby" pins and hand lotion. There was a tiny airplane model for her, too.

Mary, meanwhile, spent a few quiet, grave minutes by the window in her room. Her thoughts were far away.

Candles gleamed softly in the little church and the beautiful organ music was reassuring. "It's going to work out all right," thought Mary, as she waited for Karen and her mother to speak to some friends. "It must, but I think it is going to take a long time."

They were subdued on the way home, but dogs and house gave them such a cheerful welcome that they pushed aside, for the time being, insistent disquieting thoughts. Refreshed by Lucinda's chocolate, they trimmed the tree with great artistic effect. It was late when they went off to bed, and both girls enjoyed the luxury of comfortable mattresses and large, soft pillows.

Early the following morning a blue-robed figure slipped into Mrs. Long's room. "Merry Christmas and

move over!" it commanded.

"Merry Christmas, darling! Come right in!" And Karen slipped into her mother's bed, to be met with a hearty kiss. "My, but it's nice to have you home. And I'm so glad you brought Mary. Wasn't that beautiful playing last night?"

"I didn't know she could play, Mother! She must feel lost without a piano!"

They chatted on in typical mother-daughter fashion until they heard Lucinda stirring in the kitchen below. "Let's go call on Mary," suggested Mrs. Long. "It's time we began the day."

Mary thought an avalanche had descended upon her. The windows were slammed down and Karen and three dogs leapt simultaneously upon her bed, closely followed by Mrs. Long. "Merry Christmas! Merry Christmas!"

And it was a Merry Christmas! Stocking presents were exclaimed or laughed over and Karen was delighted with the gift of a phonograph for the apartment. After a light breakfast, so that Christmas dinner might be the more enjoyed, the girls drove Mrs. Long around to deliver baskets to several needy families and to leave gifts with others—then home to turkey and plum pudding. After dinner, Mary had another opportunity to spend some time with the piano, while Mrs. Long and Karen talked quietly about immediate problems. It seemed practically no time until bags were packed, good-byes were said and the girls were on their way to Baltimore.

"Such a letdown feeling!" sighed Mary, as they set-

tled themselves for the long ride. "My, but I had a good time, Karen! Your mother is wonderful! I don't see how you can stay away from her and your house. Our family never has played together much—like you and your mother—and we moved around a lot. We were never attached to a house like you all are."

"I adore Mother, of course," said Karen, "and I've never lived in any house but that one, so I suppose I'm rooted there. But, somehow, since I've been working, that's Mother's house, and although it's fun to visit and to be babied, I still like the apartment, and I'm glad to go back to it. It will be grand to have the phonograph, won't it? That's the only thing we needed—although of course, if we could build an addition, we would surely want a piano! Doesn't it seem a long time since we left Baltimore? I kept forgetting there was a war on, and then kept being surprised that I could forget!"

Mary had three letters waiting for her at the apartment and she read them eagerly. "It looks as if Jack is scheduled to teach at the flying field for a while," she said. "Karen, he thinks we ought to be married, soon. What do you think we should do? Everything is so uncertain, but if we weren't married, and anything happened to him—"

"Oh, Mary! Really? Shucks, there's the bell!"

Karen opened the door to Joe.

"Hi, there! Merry Christmas! I saw your lights and thought that I should welcome you home! Did you bring any brownies? Swell! I thought Mrs. Long wouldn't forget her old pal! Did you have fun? Any news of Jack,

Mary, Mary, quite contrary? I hope she didn't disgrace you, Karen."

Mary caught him neatly under the chin with a pillow that threw him off his balance and nearly resulted in a collision with the floor lamp.

"Children, children!" Karen expostulated. "Behave yourselves! Joe, you should hear this little creature play the piano! She really is something! No notes—all in her head—classics, ballads, carols, hot numbers—anything you want!"

"What's this?" asked Joe. "How come you've been hiding all this talent? I thought you were devoted to science, little creature."

"Will you stop teasing me immediately, Joe Pendleton? I have something of importance to say, but you hear nothing until you stop your foolishness."

"Shoot, kid. That was just an interlude. What's new?"

Mary told the news about Jack. Joe shook his head and sighed. "I wish I were doing something. This business of waiting around is bad. But when the ball begins to roll, I reckon it will gather speed right fast. After carol singing at the Hospital last night, I read the account in Dr. Young's book about his work in France during the last war. It certainly was a different setup from the one we have now. The wars seem so different. But the description of his activities is very interesting. You ought to read it."

"Joe, it's time for you to go home. We have to work tomorrow."

"Karen, don't be mean. Just one more brownie? Yes, I know it's time for me to leave, but I'll be peaceable if you settle for one. Thank you very much—you're an angel. Good night! I'll see you in the morning! And, by the way, Miss Long, you will be delighted to know that I haven't been near your lab since you set sail. If you find trouble on the morrow, it won't have been my doings! Toodle-oo!" And the girls heard him whistling cheerfully as he strode up Broadway.

They unpacked quietly, busy with their own thoughts.

"What will your families think about you and Jack being married, Mary?" asked Karen, after a while.

"I don't know," answered Mary. "We haven't discussed it, but I don't think Mother and Dad will mind. They realize that wars make everything move faster. This war belongs to our generation and there aren't going to be so many of us settling down to a ripe old age. We shall have to get as much out of our lives as we possibly can in a shorter time. I think maybe Jack's right, but I think I had to make that speech to convince myself. I'm going to write him now and tell him that we will do what he thinks best." Quite breathless following this momentous decision, Mary picked up her writing case and walked over to the day bed. She curled up in her favorite corner and her head, with its pretty auburn curls bent low over her pen.

Karen said nothing. The ball was gathering speed.

13

CHANGES

Scientific Societies hold annual meetings during Christmas holidays, and this year the Society of American Bacteriologists was having its session in Baltimore. Miss Johnson and Miss O'Hara had been busy for weeks, helping the various local committees on arrangements, and when the program was announced, the girls had pored eagerly over the topics posted and had planned their work so that they could hear the papers in which they were interested. The great moment was now at hand, and Karen found herself viewing it with distaste. She wrote her mother:

What's the matter with me? A month ago I was thrilled at the prospect of attending the meetings. Now it seems unimportant. All those people who are on the program have spent months and years studying the subjects they are going to discuss. It's dreadful for me to say this, but I think that they should have stayed in their own laboratories this year. I went to a meeting this morning and everyone seemed so old, and their papers so dull. Most of them acted as if the war were secondary to their problems! Of course, maybe when I have gone through as many wars as some of them have, I can be unconcerned, too. After all, this is my first! I'm not the only one. We

are all restless—I mean, all our crowd—and we are getting kind of snappy. It looks as if Sue were pretty well tied up with war effort, but it's going to be awhile before her field work is organized. In the meantime, we have all registered for First Aid courses, and for any emergency work that may be required at the Hospital. If there were only something definite that we could do, now!

Her mother answered:

"Try to be patient, Karen. Wars are very serious affairs and this one must be planned with deadly efficiency. It takes time, but there will be places for you, your friends, and all of those 'old' bacteriologists you have consigned to the shelf. Learn all you can during the next few months, for when your way is clear, your training will make you all the more valuable to your country."

News items; First Aid classes; Civilian Defense! Acceleration of studies so that students might finish their training earlier! Plans for the collecting of plasma, for determining the blood groups of defense workers, for forming emergency transfusion teams! The Hospital buzzed with new activities.

Dr. Butler came into the laboratory one morning, fairly bursting with important news. He closeted himself with Dr. Johnson for a long time. Finally they emerged, and Dr. Johnson cried excitedly, "Attention, staff! Janet, come forth from your lair! We must all pay homage to the first of us to be enlisted in the service of our country.

I give you Lieutenant Commander Butler of the United States Navy!"

They were all tremendously thrilled and crowded around, demanding details.

"I can't tell you anything," he said, laughing. "But I doubt if I see active service, so don't think of me in a destroyer, much as I'd like to be there. I am assigned to the Hospital Corps and shall be tagged for research work in a laboratory, probably at the Medical Center in Bethesda. Poison gases, perhaps; maybe a problem relative to the effect of drugs on the body at different air pressures. There are thousands of chemical problems of the greatest importance, and what little I know will be applied to studies of that nature. Wish me luck, ladies! No information about my activities will be available until the war is over, but I promise you that I shall return at the earliest opportunity and tell you all!"

This great event definitely rated ice cream, and Karen and Janet brought some from the lunchroom. Dr. Butler was unable to answer most of the questions that were tossed at him, but they learned that in two weeks he was to report in Bethesda for his assignment.

"What happens to my chemistry department?" asked Janet. "I have no boss!"

"There, there, Janet, don't be so sad," said Dr. Johnson soothingly. "You won't be long without a boss, but it's going to be a female!"

"Anyone I know, or have heard about?" questioned Janet, eagerly.

"No, but someone who is very attractive, young, and a specialist in the field. You may remember her, Karen. She taught at Smith two years ago, in the chemistry department. She went to Yale to do graduate work last year and will get her degree in the spring. Then she will head your chemistry department, Janet. Her name is Elizabeth Brown."

"I remember," said Karen. "Rather small, curly hair, merry face and such a gay laugh. I didn't know her, but everyone thought she was smart and had a heavenly sense of humor. She ought to be grand, Janet!"

"I know you will like her," said Dr. Johnson. "Dr. Butler will direct the lab officially from a distance until she arrives, but practically, Janet, you will stand alone for a while. Think you can take it?"

"I think I can, Miss Johnson," answered Janet, smiling. "As long as you are here to help when I get into a jam. I know the technique fairly well."

"I should say you do, Janet," declared Dr. Butler. "You know it better than I. You won't make any error in the problem you are working on now. Of course, there are other possibilities in the field, and Dr. Brown will probably want to try different methods. But with the apparatus you have, no one could determine the assays better than you! Results of great importance may be shown by the number of cases you are compiling. On the other hand, if this type of research should be postponed until after the war, your training will be valuable in one of the wartime projects. Chemists always need assistants."

The next few days were spent in helping Dr. Butler clean house. Notebooks with records of many years' work, old drugs, equipment, much of it obsolete, were carefully examined and much discarded.

"I've been here too long," protested Dr. Butler, ruefully, as he emerged from behind a large packing box. "Everyone should be forced to move after a stated period of time. Too many things collect!"

They sent him away with hearty good wishes and, for a present, a book he had wanted. His assignment would probably not take him far from Baltimore and they would see him occasionally, but it was the first break in their ranks.

14

A WEDDING

"KAREN," said Dr. Johnson one day, "there are some new drugs to be tested and I think that you could run the tests for me. The war has caused shortages in the supply of many drugs considered essential to medical practice. Our scientists must find substitutes. For example, the supply of quinine has been cut off by the loss of the East Indies. Quinine is used in treating malaria, and with the large number of our troops stationed in the tropics, it is imperative that we find another product. Drugs that may be possible substitutes for quinine have been synthesized and chemical laboratories are working at top speed to determine the relative values of the products. Another problem that must be worked out in the laboratory concerns substitutes for the sulfonamides. These drugs are very powerful and their use should be restricted to serious illness. We must find drugs that can be used as alternatives for sulfonamides, either in the cure or prevention of dangerous disease. This is where you and Maggie and I come in. Some combinations of chemicals have been given me to test for their bactericidal power. If we can demonstrate that some of these combinations will kill bacteria, then those combinations can be studied further,

while those that exhibit no killing power can be discarded. I will show you this afternoon how to set up the experiment and I think we can run it tomorrow. This is urgent, and we must test the solutions as fast as we can."

Dr. Johnson explained details of dilution, timing, and inoculation of germicidal tests that afternoon, and Karen felt considerably happier as she walked home. "Perhaps I am beginning to do my part," she thought, giving a little skip.

She hummed a gay tune as she ran up the stairs. She put her key in the lock, but before she could turn it the door flew open and she was swept off her feet by two long uniformed arms.

"For heaven's sake, Jack Wehr! I'm glad to see you and where did you come from? Put me down, will you?"

"Oh-h-h Karen, hello! We are going to be married tomorrow and you are to be the maid of honor!"

"Have you lost your mind? What are you talking about?" Karen caught sight of the prospective bride, sitting on the day bed, her blue eyes round as saucers. "My, but your sweetheart is handsome, Mary! Look at his wings! Aren't you proud of him? Is he telling me the truth?"

"Karen, he has a license and it looks as if we are going to be married tomorrow, for there won't be another opportunity for a while."

"You mean—"

"Three days' furlough and then no one knows where. That's why I could get a license so quickly. My family

are flying home from Florida tomorrow, but we can't wait for them if they are delayed. It will have to be a private wedding. Of course, we can't do a thing about Mary's family—we telephoned them this afternoon and her mother and dad gave us their blessing." There was a grin on Jack's face as he said this.

"Jack Wehr! Something tells me that you are not exactly displeased about this emergency," declared Karen, smiling at him.

"You wouldn't expect me to be displeased at the opportunity, would you?"

"I didn't mean that and you know it."

"To tell the truth, I think it's the proper way to be married," answered Jack. "Mary will probably think that the ceremony isn't legal unless she prances down the aisle with a mess of bridesmaids, but I think it's o.k. as long as you and the gang are there."

"That isn't true, Jack, and stop exaggerating," replied Mary. "I never wanted a 'mess of bridesmaids.' I said that I might have a new dress and hat, under the circumstances, but it's a minor matter, isn't it? I'm so excited I'm numb inside. Karen, what do I do now?"

"Why ask me? I've never been through anything like this before. Oh me! And I begin germicidal tests first thing in the morning! Never a dull moment!"

"We won't hold you up long in the morning. We are meeting the Rector at eight-thirty. At least I had the presence of mind to arrange that detail. And pat me on the back for this thought. Knowing how beautifully you

broil steaks with attending mushrooms and tomatoes, look what I brung you from our old friend the North Avenue Market! Mary will never know what a wonderful time you and I had there the day she chased Tom White upstairs with the trunk! Remember? Of course I know it's an imposition and all that to make you cook, but it may be years before I can impose on you again."

"Stop wheedling, silly. I'm charmed to cook a prewedding dinner for you and my roommate. Here comes S.J. Won't she be surprised?"

Sara Jane was properly astounded and excited by the great news. She immediately rushed to the bakery for something that would take the place of a wedding cake, promising to call Elsa and Joe to inform them of the coming event. Karen retired to the kitchen to peel potatoes and clean mushrooms, leaving the gratified bride and bridegroom holding hands and looking at each other as if they were both dazzled.

Sara Jane's slow tread was heard on the stairs and she gave the door a kick as a command that it be opened.

"No, you can't see what I have. It's a surprise. Now, watch it, Jack! It's fragile!"

She retired to the kitchen and giggles were heard. Business was being attended to, however, for a lovely aroma drifted through the apartment, and the sizzle of the steak as it hit the big frying pan told that dinner was nearly ready. Sara Jane, a mysterious smile on her flushed face, set the table with customary efficiency. Soon Karen called "Soup's on!" and dashed to the bedroom to make

herself presentable. While she was there, Jack and Mary took command of the kitchen. They cut and served the steak, arranging the plates artistically with French fried potatoes, mushrooms, and a tiny baked tomato. With the plates on the table and the candles lit, the effect was quite festive, and they felt they were having a proper celebration.

"Coffee only for dessert," said Karen. "We're saving our surprise until company comes!"

"Golly, but that was a delicious dinner, Karen," said Jack, fervently. "I can dream about it for a long time, if beefsteaks don't come my way."

"Mary will be cooking you lots of them pretty soon," Karen asserted cheerfully.

"Not as beautifully as you cook them, Karen," declared Mary, loyally.

They had scarcely finished their coffee when friends began to arrive—all excited, all wishing good luck to the bride and bridegroom. The rooms were full of the hum of voices and Mary and Jack were both touched by the many demonstrations of love and friendship. Sara Jane's telephone calls had been efficacious. At the height of the party, Sara Jane brought in her surprise: a real wedding cake, with a little doll bride and bridegroom standing importantly in the center.

"How did you get it on such short notice, S.J.?" asked Elsa.

"Well, it isn't really a wedding cake," confessed Sara Jane. "Mrs. Smith, at the bakery, had the bride and

groom, so we combined two sizes of layer cakes. Of course, it's all wrong—the bridegroom should be in uniform, unless Mary changes her mind before morning. If we could postpone the wedding for a few days, we might be able to send Mary and Jack off in the style to which they are accustomed. You wouldn't consider waiting, I suppose?"

"Not one minute longer than necessary," answered Jack. "It's a long time till tomorrow morning."

"I haven't heard a thing about your plans, you two," said Sue. "Have you any? Outside of the ceremony? I gather that Mary isn't leaving her job now, but—"

"We can't plan, Sue," answered Jack. "I'm going to an embarkation port, and even if I were to stay in this country, I think Mary is needed at the Hospital. Someone has to take care of the work that must be done, and with so many people moving out, technicians are going to be scarce. I shouldn't want her to stop, now, just because she is changing her name."

"Good for you, Jack! Miss Johnson says that so many opportunities are opening up for trained laboratory workers that she thinks we shall have to establish refresher courses for people who have worked in labs and might be persuaded to come back to it. She has had six or seven calls this week—requests for information about technicians."

"I love the way you give Jack all the credit—have I anything to do about my career? Whose job is this, anyway?" exclaimed Mary.

"Why, Mary, you know Jack wears the pants in your family," teased Sara Jane. "He has been boss ever since he helped Tom White carry your trunk up the stairs. Great big wonderful man!"

Mary's early training in baseball stood her in good stead. She could always stop her tormentors with a pillow.

Much later, when the guests had left and Mary and Jack had gone for a walk, Karen and Sara Jane were straightening the apartment.

"I ought to wash clothes, Karen," said Sara Jane, "but I'm completely tied up in knots. I'm so glad for them and so sorry for them all at the same time that I am completely mixed up."

"I know how you feel," declared Karen. "Let's put on our pajamas, cream our faces, turn off the lights and play *Scheherazade* on the phonograph. That ought to help us relax."

"It's worth trying," responded Sara Jane. "I don't want to burst into tears on Mary's wedding day."

The girls were up early the following morning. Karen and Sara Jane had on their hands a most serene bride-to-be; completely at ease and so unusually calm that they were worried about her. She looked pretty in her light-blue suit, with a little blue hat on her auburn curls. Her bridal corsage was of tiny white orchids. Karen's suit and hat were of navy blue, her flowers pink roses. When Joe met the girls, he declared that they looked as if they had planned the wedding a month before. Pete brought

Sue and Janet; Elsa came with Jack's aunt and uncle. As they gathered in the parish house, the rays of the sun came through the window and shone on their earnest faces. The ceremony was most impressive.

After receiving congratulations and kisses, Lieutenant and Mrs. Wehr rode away in a shower of rice. They were going to the airport to meet Jack's mother and father and have breakfast with them, if they had arrived on a delayed schedule. They would have the week end to themselves.

The young people were rather subdued as they rode back to the Hospital, each busy with his own thoughts.

After the excitement of the wedding, it seemed a far cry to germicidal tests that morning. Karen knew, however, that the experiments must be started immediately. She quickly assembled her glassware, and, under Dr. Johnson's supervision, set up the required dilutions of organisms and drug. It was a full day's work. With the details of the experiment new to her, she had no opportunity to dwell on the startling events of the past twenty-four hours. At six o'clock, hands tired and back aching, she dragged herself home and fell into bed.

"What a day!" she moaned. "It doesn't seem possible that it's only twenty-four hours since last night at six o'clock. Are you as tired as I am, S.J.? I feel like hibernating for a year."

"I wasn't much good, today," admitted Sara Jane, who was carefully amputating a hangnail. "Something very strange happened to our colorimeter and I couldn't

figure out why it didn't work properly. I felt better when the new assistant, who thinks he knows everything, couldn't make it behave either. He hasn't been the same since the day the locksmith stamped a new key for the lab door. The key didn't work, and I insisted that we should have to return the key and have another made. Andrews, with superior efficiency, filed the key a bit and it now works perfectly. But the colorimeter had him licked—at least for the time being. I left him struggling and came home. Mary and Jack have been married for a long time, now. What are we going to get them for a wedding present?"

"Goodness, I don't know. I should think money in the bank would be the only thing. I miss Mary. I suppose marriage won't change her very much. She was so angelic today she didn't seem like herself, but I can't believe her turbulence is gone forever, can you?"

"Of course not." Sara Jane laughed. "She wouldn't be Mary without her little gusts. She's probably having one right now."

"Telephone, Miss Long!" stentorian tones from the depths.

"All right, thank you, Mr. Gasser." Karen wearily struggled into her dress. Her slippers clattered down the stairs and a minute later clattered back.

"Oh, Sara Jane! Elsa says someone called her and said that they needed girls for an enlisted men's dance this evening. I told her we were practically paralyzed, but she says we have to come—it's a patriotic duty."

"Oh," groaned Sara Jane. Then she sat up with great energy. "Of course we can do it! In fact, it is the least we can do. Where and what time? We'll have to make it snappy—we haven't eaten yet!"

15

THE NEW LAB

Mary returned to the apartment Monday and the girls noted no fundamental changes in her character, or disposition. No letters were to be expected from Jack for a while. His whereabouts was anybody's guess.

Karen's laboratory technique was improving rapidly. She was soon competent to run several experiments a day and felt confidence in the results she reported. She became interested in the variations she found in the readings on the different drugs and made several modifications in her method that met with Dr. Johnson's approval. She helped, also, in preparing material for demonstrations in teaching the medical students. She had a facility of speech and manner that made teaching easy for her. Thus she was able to share some of the increasing load of the staff members. Miss Johnson was well pleased with her, and Karen, for the time being, was content. The girls had learned definitely that women were not being accepted for technical positions in the Overseas Hospital Unit, and although opportunities for other types of service were available, nothing had the lure of the Unit.

"Karen," said Dr. Johnson one afternoon, after they had gone over the results of some experiments. "What

are we going to do with you? If we weren't fighting a war, I should certainly recommend your doing graduate work next year. As it is, your abilities are needed right now. Have you any special interests?"

"I really don't know, Miss Johnson," said Karen, honestly. "I should have loved to join the Unit, but of course that's out. I haven't thought much about the positions you have mentioned because my time as a volunteer is only about half over. I had thought possibly about working in a Camp, or maybe a Base Hospital. Shall I have to take Civil Service examinations for a position like that?"

"The Civil Service List, which is limited to persons who have qualified through competitive examinations, is not being used during the emergency. Anyone with proper experience and training may be appointed to a position for the duration and for six months afterward. With the need for trained personnel increasing as it is, many laboratories are going to be delighted to have anyone willing to be trained, much less a trained worker."

"How about a job in a Public Health Laboratory or maybe with a pharmaceutical company? I imagine that the Army and Navy are going to require plenty of vaccines for various diseases."

"You would be able to find a job without any difficulty. This is what I wanted to suggest. The laboratory here is going to undertake some research for the Government, and is also to be assigned a certain amount of teaching. Would you be interested in continuing in the type of work you are now doing? I must increase the staff

in order to handle our assignment. You have made yourself invaluable. I should love to have you stay. Work that you will do will be an important part of the war effort. If you are interested in something else, however, I shall understand. You must make your own decision."

"I had never thought about staying on here, Miss Johnson."

"Think it over, Karen. You don't have to decide immediately. It would be unfair to keep you much longer as a volunteer. The vocational bureaus of the colleges will be able to place any graduate with scientific training in a paying position this year. 'Volunteer Workers,' in the sense by which you were apprenticed, so to speak, are out for the duration."

"S.J., I don't know what to do," Karen said later. "Resting in Brady, while you all go forth to see the world, doesn't sound very exciting, but then, I've been trained by Miss Johnson and it looks as if the work that is to be centered there may be important."

"I'll wager it will be important, Karen," answered Sara Jane, thoughtfully. "With Sue tied up in the meningococcus work, Miss Johnson would be considerably helped by having you stay because you know her methods. Besides, you are interested enough in what you are doing to go ahead independently."

"Well," said Karen, with a sigh, "field work or a job in a Base Hospital still sounds more to the point, but I'm afraid there is no question in my mind. I can be of most help in the Brady Institute."

She wrote a long letter to her mother that evening, knowing, however, that the decision rested with herself alone. There was a mental tussle. Two days later Karen told Dr. Johnson that she would accept a position in the Brady Laboratory.

16

FUTURES AND FAREWELLS

Joe came strolling nonchalantly into the laboratory. He had been shifted to the surgical service and the girls hadn't seen him for several days.

"Hello, stranger," said Miss O'Hara. "We never see you, now that you are a surgeon. Busy?"

"Well, rather," answered Joe, placidly. "The light of my presence has been flickering, but it's likely to be extinguished completely—for the duration."

"Joe Pendleton! Are you announcing that the Unit has been called? Why didn't you say so?"

"I thought I was," Joe grinned, unabashed.

Dr. Johnson came tearing out of her room.

"Maggie, did I hear you say that we were about to lose the Pride and Despair of the urological service? Oh, I forgot—you have been moving in surgical circles, haven't you? Are you really going to pull out? Janet, oh Janet! The Unit is about to leave! We are heartbroken! Whoops! Tell us all!"

"There isn't much to tell except that one section goes north and the other south. There seems to be a little difficulty at the last moment in filling all the positions, but I think we shall be under way shortly and in good order.

Well, Puss," pulling Karen's hair, "will the glamor girls miss me?"

"Will they?" retorted Karen. "I don't know your fancy friends, 'the glamor girls,' but the girls in the apartment and their associates are going to miss you considerably. Who will call up for companionship at all hours and who but you could eat all the brownies Lucinda sends?"

"No one, I hope," answered Joe. "You wouldn't let Karen and Janet come along as nurses, would you, Miss Johnson?"

"Exchanging a good bacteriologist and a good chemist for two untrained nurses? Come on, Joe, you will have to think up something better than that," said Dr. Johnson. "If the Unit had wanted them as technicians, they could have gone with my blessing, but the weaker sex was scorned. Ladies must have a devastating effect when they work in distant places."

"Ladies always have a devastating effect, especially Miss O'Hara in her Motor Corps uniform. I'll see you again—I have to go spread the news. Don't cry, Janet," and he was off.

"Somehow I think he isn't as calm as he would like us to think he is," reflected Miss O'Hara.

"I think she is right," agreed Karen to herself.

The announcement of the Unit's departure created a furor. The Hospital seethed. Excitement was intense. Changes in the Unit's personnel were made, none without discussion from maids and orderlies, plumbers and

electricians, cooks and waitresses, nurses and dieticians, technicians and interns, heads of departments and visiting physicians. There was also comment from all Baltimoreans who had friends and relatives on the Hopkins staff. The nurses going in the Unit were agog, but no more so than the doctors. Impossible as it seemed at times, all the loose ends were finally gathered together, and, on a beautiful day in April, the newly uniformed groups congregated on the grounds of the Hospital to be photographed.

Persons not on the lawn observing this great scene were peering out of windows. The Unit members looked impressive and the expressions of earnestness and determination under their gay smiles made many of the onlookers wistful. It was an honor and a privilege to represent the Hospital on foreign shores. Those who were staying home, turned back to their mundane tasks rather reluctantly. The uniforms were alluring.

In a few days the Unit departed. The staff remaining settled down, each one with extra work and additional problems assigned daily.

Brady was preparing itself for the war effort. Dr. Johnson spent much time in conference, planning the research work and the teaching expected from her division. She returned from Washington one day and immediately called Miss O'Hara and Karen into her office.

"There will be groups of Navy physicians sent here," she said, "to review recent advances in the diagnosis,

treatment, and prevention of certain types of infectious disease. We have been assigned to tell them what we have learned about the bacteriology of Neisseria: the methods we have perfected for identifying them, culturing them, and for diagnosing the diseases they cause. We shall also be doing research work on infection in animals, and on the germicidal action of drugs. I think we shall need one, possibly two more technicians, and also another maid. The amount of media and glassware that we shall require is going to be much greater than we are using now. Karen, are there any of your friends who might be interested in working with us?"

"How about Clara Jordan, Miss Johnson? She's still with Miss Zepp, in pediatrics. She's a nice girl, and has had experience."

"I wonder if she would be interested," said Dr. Johnson. "I know she is quite capable. Suppose I call Miss Zepp and talk with her about Clara, before we approach Clara, herself."

"What about the teaching, Helen?" asked Miss O'Hara.

"As I understand it, Maggie," answered Dr. Johnson, "there will be about twenty officers in the group who will be assigned to the Hospital for a period of six weeks. About twelve hours of that time is to be spent in our lab."

"And we are to teach them?" asked Karen, unbelieving.

"Just as you teach medical students," answered Dr. Johnson, smiling.

"Do you think they will like it?"

"I'm sure I don't know, but since they will be ordered here, it won't make any difference whether they like it or not."

"Well, looks as if we have our orders, too," said Miss O'Hara, briskly. "Let's go over the material and see what we need. When does the class begin?"

"In two weeks. You be that committee and see that we have plenty of glass slides and culture material. We can borrow extra microscopes from the School of Hygiene. I'm going to call Miss Zepp about Clara right away."

Dr. Johnson's contacts with Miss Zepp and Clara were highly successful. Clara came to work in Brady two weeks later and was a charming addition to the staff. She had been well-trained and was capable and intelligent. She was also good to look at, with golden hair, soft blue eyes, and a slight figure.

"No wonder they tell me I have the best looking staff in the Hospital," chuckled Dr. Johnson, as she met her girls in the hall, one day.

When the first twenty men in uniform appeared in the lab, it was a great thrill. Dr. Johnson greeted them with her customary cordiality.

"We are delighted to have you here," she said. "I hope you will find your time isn't being wasted. Much of the procedure we show you will be done by your technicians, but it is imperative that you understand the importance

of having these tests performed accurately." She explained carefully and each officer was given a microscope and material for study.

"I haven't looked in a microscope for years," grumbled one of the men. "I couldn't see anything if I tried. I want to be on a boat."

"Let me help you," suggested Karen. "Perhaps if I adjust the light, sir, you could see better."

"I don't know why I should bother," he persisted. "There will be someone else to do this— I won't have to diagnose slides. It's a waste of time, I think, and we should be on active duty."

"What shall I say?" thought Karen. "I don't want him to think that I am being rude, but I have to maintain order—"

Her eyes danced. "I beg your pardon, sir," she said, "but what you need is discipline."

She couldn't tell for an instant whether her pupil was going to roar with rage or with laughter, but fortunately he chose the latter.

"Well said, young lady. You are quite right and I apologize. Show me how to adjust this instrument, and I promise you there will be no further breach of conduct."

After that episode, the class moved easily. Karen thought the men seemed older than she had expected, but most of them had been in the Navy for many years and had interesting salt sea tales to tell. Pearl Harbor seemed to gain reality when mentioned by an officer who had recently been stationed there. Teachers and pupils be-

came very friendly and everyone enjoyed the classes.

One day Dr. Johnson and Miss O'Hara called Karen into the office. "Karen," said Dr. Johnson, "we are having a serious discussion. I've learned from several sources that most of the officers in this group know no one in Baltimore and have a pretty dull time when they are off duty. I think that we should have some kind of party for them and introduce them to the nice people here about. Maggie and I thought that perhaps we could swing a reception some afternoon at the Hopkins Club. Could we persuade you to be on the reception committee?"

"How nice! I'd love to help, and thank you," answered Karen. "I hadn't thought of it, but I suppose those men do get homesick. They are older, and it didn't occur to me that—" she stopped, scarlet.

"That 'older people' need cheering up?" Maggie grinned at Karen's embarrassment. "That's all right, Karen.

"I think it will help all of us," she continued. "We've been rather low for the past few months. If we don't do something about it soon, we shall be old before our time. Then what will Johnny say when he comes marching home? Goodness, Karen, I beg your pardon. That song was vintage of the last war. Dates me, doesn't it?"

"It certainly does date you, Maggie," said Dr. Johnson. "That song was vintage of the Civil War! Nevertheless, you're right. The staff needs a party, the staff is going to have same, and the party is going to be a good one!"

A party was what their world had been waiting for. Everyone approached was enthusiastic. Sandwiches and punch were ordered, invitations issued, and one afternoon, dressed in their best bibs and tuckers, the ladies of the laboratory betook themselves to a reception line at the Faculty Club.

It was a wonderful party. The guests came early and stayed late. There was more cheerful conversation than any of them had heard for months. Unheard of numbers of sandwiches were consumed, great quantities of punch were drunk, and finally, late in the evening, Karen and Sara Jane found themselves eating steaks with two officers in a famous restaurant. Dr. Johnson and Maggie were being dined at another table, and Sue and Janet had gone to dance at another restaurant. They arrived home much later than they had expected, surprised and touched by the expressions of gratitude from so many of the officers.

The evening following, Karen was writing to her mother:

"The officers seemed rather old," she wrote, "but they were keen to have a good time and delighted to have people to talk to. We have decided that we must be more sociable to the next group of officers which come for training. And what do you suppose Miss Johnson did? She is the most generous person I ever knew! One of the officers was looking for a home for his cat and she offered to take it for the duration. It will be a great responsibility for her, but she was so spontaneous in the offer that the man nearly cried.

By the way, are you having any trouble buying food for the dogs? Elsa says canned dog-food is off the market and that people who run catteries and kennels are wondering how they are going to feed their animals. We may have difficulty procuring meat for the laboratory. You know we need it for the media in which we grow our bacteria. Most of our preparations are made with meat stock, and according to the plans Miss Johnson has for our next year's work, we are going to be raising plenty of organisms!

We may have difficulty getting other supplies, too. The numbers of glass plates, tubes, and pipettes that we intend to use is fantastic, and all the articles must be washed and sterilized every day. Delia and Pearl are going to be hopping. They will have one assistant, maybe two, who will have to be taught to stopper tubes with cotton, to wash glass carefully and to run the sterilizers. Until I helped Delia the other day with some special media, I think I never fully realized the amount of work this is, and the special experience and skill it requires. I thought I knew my way around the lab by this time, but I was clumsy!

I am learning a new technique that is different from anything I have ever done before. We are growing certain strains of bacteria in hen's eggs, fertile ones. We remove a square of shell from the side of the egg, inoculate the membrane with bacteria and paste scotch tape over the window we've made in the shell so that we can observe any changes occurring as the organisms grow. The other day some of the eggs hatched and the incubator resounded with the chirps of chicks! They seemed to be

happy, healthy fowls and Freddie took them home to raise! I'd like to have a few ostrich eggs. Wouldn't they be fun to open? Clara is adapting herself to our lab very well and I think the Boss is pleased with her. Mary had a letter from Jack but it didn't tell her anything. He must be in the southwest; he couldn't say where. She doesn't talk about it much, but she rents a piano in an apartment where the people are away in the afternoon. She's over there every day, telling her troubles to the piano, I guess. S.J. is busy with her thesis; Joe says he has gained five pounds since he has been away from the 'glamor girls' and Pete said to give you his love next time I wrote. He goes into the Army as soon as he gets his degree. And, lady, what are you doing with yourself? Your recent letters have been noncommittal to say the least, and I am suspicious. What are you up to?"

No one was more surprised than Karen when she discovered what her mother was "up to."

Mary and Sara Jane came into the apartment at dusk, their faces flushed and their arms full of packages. Karen, still wearing her coat, was sitting in a chair, deep in a letter.

"Hi, Pals! I've read this letter three times and I'm stymied. Mother's joined the Navy!"

Mary and Sara Jane stared at her in astonishment.

"I am not unbalanced and apparently neither is the Navy nor Mother. Believe it or not, she not only has

joined the Navy but she is being sent to Smith to be trained!"

"Why, what fun!" cried Sara Jane. "What's she going to do? Navigate?"

"I wouldn't know," answered Karen, "but I wouldn't put it past her. I knew there was something in the wind! That mother of mine is smart. My grandfather was in the Navy and Mother heard lots of shop talk while she was growing up. She probably knows all about battleships and has spent the last month brushing up on naval strategy! She will no doubt come out of the war with an Admiral's rating. With Mother in the Navy, I know the war is practically won!"

"Stop boasting, Karen, and give us some information. How and when?" interrupted Mary.

"It seems that there is going to be a Women's Naval Corps, like the Army one, and Mother is going to be an officer in it. She really knows about radio communications; I suppose that is why she was selected. The officers are to be trained at Smith, so she is to report there. Now isn't that something?"

"I think it's simply swell!" exclaimed Mary.

"What is she going to do about the house, Karen?" asked Sara Jane.

Karen's face clouded. "That hurts a little," she admitted, "but it has to be done. She has rented it for the duration. She has enlisted the big dogs in DOGS FOR DEFENSE, and Noodle, the little one, is going to stay with Lucinda. Mother said she thought of asking us if

we wanted to keep Noodle and maybe have Lucinda move down here to take care of us. She said she realized then, that that would mean moving into a bigger apartment, probably across town, which would be a nuisance. Having Lucinda taking a job in Yorkville will relieve Mother's mind, because she can keep an eye on the house. We shouldn't have wanted to move, should we?"

"Goodness, no!" Mary answered promptly. "It takes Sue twice as long to reach her aunt's house as it did last year, and the crowds on the busses are enormous. There are so many defense workers, and of course a great many of them come to our neighborhood. Anyway, we couldn't think about moving now. Sara Jane will be spreading her wings as soon as she gets her degree in June."

"Oh, don't move!" exclaimed Sara Jane. "Even if I'm not here, I want you to stay in this apartment. I couldn't mourn for you if I thought of you in a fancy spot with a maid and an elevator. Karen, is your mother going to wear a uniform?"

"Surely—Navy blue and all. Am I impressed!"

Later, Karen was in conversation with Elsa and told her the news. "Karen," said Elsa, thoughtfully, "maybe I could qualify for something like that. I have a college degree, no dependents; I've had two years' selling experience. Perhaps I could qualify as a shopkeeper."

"The uniforms are much better looking than the Motor Corps uniforms," said Karen, teasing.

"Don't be catty, Karen," replied Elsa. "Stick to your

beautifully fitting white coats and your dirty white shoes and don't say a word! I am going to write to your mother immediately and find out whether or not there might be an opening for me."

"How about Captain Chinky? Will he enlist in 'Cats for Défense?' "

"I don't believe that cats are interested in organized warfare. They have individual spats and then it's all over with. How about your taking him? He is accustomed to being by himself during the day and really, he's not terribly hard on the furniture."

"It might work—if you are considered valuable enough to serve your country in uniform. Good luck! See you!"

17

THE NEW MEDIUM

KAREN had an idea. For a while it was a little speck in the back of her mind and then it began to grow.

"Miss Long," said Delia one day. "I don't know what we are going to do about meat for media. We used to be able to get scrapings from the market, but now I have to buy whole meat. It's getting harder to get the amount we need. Our butcher says that he won't be able to fill our regular order much longer, and I can't make up as much special medium as Miss Johnson wants if I can't get the meat."

Karen went to see Dr. Johnson. "Miss Johnson," she said. "I have a bee in my bonnet."

"What's on your mind, Karen?"

"Delia is having such a time finding meat for our medium, and the situation is certainly going to grow worse, rather than better. I'd like to try a meat free medium combined with some other substance—possibly an amino acid—that can be used in place of meat."

"It's certainly a sound practical problem, Karen. Devising new media is a heartbreaking business, however. There are many factors to be considered, but it would be a help if you could find a substitute for meat! Don't

select something that is going to be as hard to obtain as meat! Remember that many materials are growing scarce. Another thing—your experiments will have to be limited. With the teaching and drug experiments you are carrying now, you will have little time during laboratory hours. Furthermore, we can't tie up much glassware."

"I thought of that, Miss Johnson. If it's all right with you, I can run my experiments in the evening. I will remember about the glassware, and use only a few plates at a time. I can wash and sterilize the pipettes and tubes I use. I have a list here of possible substitutes I might try in place of meat. Will you look it over, and tell me which items are practical? I can write to the pharmaceutical houses for information about prices."

Dr. Johnson studied Karen's list.

"It looks as if you had gone over the literature on the subject carefully, Karen," she said, approvingly. "Let's see—"

Certain substances on the list were approved and Karen went off to attend to her correspondence. She was delighted to have had her plan approved. If she could find a meat-free medium suitable for growing the organisms they used in their experiments, a great load would be lifted from Delia's, and many other media makers' shoulders.

Late the following evening the ringing of the Gasser's phone broke the quiet. Mary rose from her chair.

"Sounds like long distance," thought Karen.

"Miss Long, telephone," called Mr. Gasser.

"For you, Karen," announced Mary.

"Wonder what's on Mother's mind," said Karen to herself, as she hurried down the stairs. "It certainly sounded like a long-distance call."

"Miss Karen Long?" questioned the operator. "We have a call for you. Ready, San Francisco, go ahead."

Karen nearly fell off the seat in her excitement, and pushed the phone practically through her ear.

"Hi, Karen," said a noncommittal voice, "how are you?"

"Joe! Are you really in San Francisco?"

"Apparent, isn't it? But not for long. Are you missing me?"

"We surely are, and—"

"I mean, is Karen missing me? You know, the funny girl that feeds people pretzels."

"Of course, silly, but—"

"Well, tell her not to pine away and die, or anything like that, but to please keep on missing me and to write me often. Don't forget. Say good-bye to the others for me, and good-bye to you, Karen."

"Good-bye, Joe."

Karen replaced the receiver on its hook and her heart seemed to sink right through the floor. She had never said such a final good-bye to anyone before.

May can be balmy in Baltimore. The gardens in the

north of the city bloom with tulips and flowering shrubs. The trees have delicate green leaves and the grass in plots along Broadway shows youth and promise.

The windows of the apartment were wide open. Sue, Karen, Sara Jane, and Mary, clad in shorts, were lazily sipping the current substitute for coke.

"Most surprising to see us all here together. We haven't sat down at the same time for months."

"And won't again, soon," added Karen.

"Can you remember how we tore around last summer? It seems positively wicked," said Sara Jane. "Cars, dates, parties—how do you suppose we accomplished anything?"

"S.J., we aren't completely done in, yet," Sue laughed. "What's going on tomorrow night?"

"Tomorrow's only a Department party, which makes a difference."

"Of course it's different," agreed Sue, "and we are, too. We never forget for long about the war. With my hopping the B & O train tomorrow for the great open spaces and a training camp, I know that I am not going to forget for a minute."

"Have you all your paraphernalia, Sue?"

"Yes, Karen, I'm practically in my bag, now. I'm probably taking just the wrong things for three months' field work, but one of the technicians at camp will surely help me. Dr. Phair says girls are doing hematology as well as basals and electrocardiographs. Woman technicians are working in the X-Ray Department, too. They

are housed with the nursing staff and I shall stay in the nurses' quarters. I don't know much about the laboratory but I am sure that everything we need won't be there when we arrive. It takes much equipment, and deliveries are slow! Did Elsa call?"

"Oh, I forgot. She said this was her last day at the shop and that she would be over this evening. She leaves for Smith Wednesday. The use of women's colleges for Army and Navy training stations is certainly going to change the educational setup for women, isn't it? Smith won't be able to take as many undergraduates as usual next year, if the Navy needs room for the WAVES!"

"There won't be as many females demanding higher education. A great many will be in auxiliaries or in munition plants. The men's colleges will suffer even more, won't they? You can't very well indulge in a liberal education when you are fighting for survival," said Sara Jane. "Aren't you all glad that we have come as far as we have?"

"Life will probably be so different for the girls who are growing up now that our spending four years being educated leisurely will seem like the greatest waste of time to them. Education was pretty soft for us," said Mary. "Younger girls than we are will know all we know and will have more efficient methods of using their knowledge. Are you going back to the lab tonight, Karen?"

"I thought I would, Mary. Is there anything you want me to do?"

"Would you mind if I tagged along? I could wash glassware or make readings for you."

"Aren't you nice? Surely I can use you. You make such charming company, Mrs. W."

"The pleasure is all mine," responded Mary, graciously.

"How is your brain child growing, Karen?" inquired Sue.

"I think we have found our substitute, but I'm not sure of the exact quantity we need. I'm running duplicate series, using different amounts of the substance and testing most of our routine cultures. The readings this evening may give us a lead. I want to run different lots of the medium before I have someone else check me. Right now there is no flaw in the method as far as I can tell, but I'm still skeptical. Miss Johnson has told me of fearful pitfalls into which unwary investigators have fallen. The obvious hazards have been avoided, I think, but there may be something I don't know about."

"You should be awarded a medal with palms if you succeed, my sweet. We are having no trouble as yet about the meat situation, but cries have come in from other places. What a gift your medium will be to labs in field hospitals! What grows your strains of Neisseria should grow my strains, the little darlings!"

"I'm sure you use stronger names than that on them when they don't grow," said Karen, laughing at Sue's endearing terms.

The ringing of the doorbell interrupted a conversation

threatening to become rather technical. Mary opened the door. A delivery boy stood there, holding a box of fresh young grass. "Miss Karen Long?" he inquired.

"Yes," said Mary, at a loss for words. "What—?"

"Oh, I know," interrupted Karen, coming to the door. "It's grass for Captain Chinky to chew on. I probably forgot to tell you that Elsa is bringing him over this evening. She thought that if he had something pleasant like fresh grass for dessert, he wouldn't object quite so much to his transfer from North Charles Street to North Broadway."

"I thought that she didn't want to part with him until she was ready to leave town," said Mary.

"She decided the packing might disturb him, poor beast. I know how our dogs must have felt when they found Mother moving out. Chinky will probably howl all evening."

"He can't be any worse than some of his relatives in the alley," retorted Mary.

"I don't know. Siamese are supposed to be particularly noisy. The story is that they can always talk their owners into giving them anything they want."

"Personally, I should prefer a gardenia to a box of grass, but there is no accounting for taste," said Sara Jane.

"You certainly wouldn't want a gardenia for dessert!" exclaimed Sue. "Karen said the grass was for dessert."

"I am a little mixed," admitted Sara Jane, "but probably not nearly so mixed as poor Captain Chinky will be! No grass for me! Let's get some raspberry ice for our

dessert tonight!"

"Are you sure the drugstore has it?"

"I saw the writing on the wall!"

"Fine! You go buy it, Karen, while I fix the salad and potato chips. Everything is cold tonight, and will be ready in a jiffy!"

A little later, as Mary and Sue were straightening the kitchen after their dinner, Karen heard a cab door shut, and then unmistakable feline cries.

"Here come Chinky and Elsa! Chinky is certainly announcing in loud tones his dislike of the neighborhood! Listen to him!" Karen ran to the door. "Chinky, it isn't that bad! Hi, Elsa!"

"He isn't objecting to his future home," said Elsa. breathless after climbing the stairs with her load. "He doesn't like being shut in the carrier. He can't see what goes on. Here you are, Chinky. Your home for the duration!" She opened the carrier, Chinky leaped out and began a careful examination of the apartment.

"Isn't his coloring unusual!" said Mary, as she watched his sleek fawn colored body investigating table and chairs. "I hope he learns to like us, soon."

"Oh, I think he'll become acquainted, with no difficulty," Elsa declared. "Of course, I want him to miss me for a while: maternal vanity, you know. I'm very grateful to you for taking him in. Hi, Sue! Looks as if you and I are going into the fray!"

"Well, the rest aren't too far behind. Karen's helping with scientific problems and Sara Jane will be in the midst

of everything, shortly. That leaves Mary to take care of the health of those who stay home and most of those are defense workers. Looks as if the Government is going to need all of us."

"All of our money, too," added Elsa. "Three nights last week I sold bonds."

"Karen and Mary have a good stunt," said Sara Jane. "If I ever go on salary again, I'm going to do the same thing. They cash ten per cent of every check in defense stamps."

"The shop has done that for me," said Elsa. "They take ten per cent of my salary each month. The only way you can be sure you are doing your part is to be systematic. Working tonight, Karen?"

"Yes, I'm going over for a while. Mary's coming along to help, but there is no hurry, Elsa."

"I must go, Karen. I hate saying good-bye. When there's nothing to say." She looked at the girls, appealingly, her eyes very bright. "I'm off, girls. I'll say 'hello' to your mother, Karen, if I see her. 'Bye, Chinky. Be a good cat." She hid her face in his fur for a second and then turned blindly away. The door shut behind her.

"I didn't want to cry," Karen sobbed indignantly into her handkerchief. "Aren't we goofs?"

"I haven't a handkerchief," muttered Mary, making for the Kleenex box.

"This fond farewell has to be for Sue, too," said Sara Jane, wiping her eyes. "I can't go through it twice in twenty-four hours!"

"Thank goodness," responded Sue. "I didn't know this was going to happen. I am now going home—as soon as I can get my face under control!" She slid her skirt over her shorts and examined her ravaged make-up. "Buck up, females! I never saw such a bunch of sillies!"

"Wait, Sue. Mary and I will walk you to your bus," said Karen. "We are going to the lab. Get your skirt, Mary."

"You aren't going to leave me in this Slough of Despond," declared Sara Jane, firmly. "Can't I come to the lab and read there, Karen?"

"If you won't be a nuisance! I'm feeling too sorry for myself, as it is. You keep house, Chinky. He looks like someone's fur piece, doesn't he?" Chinky opened one blue eye in response to her hand on his back and promptly returned to his nap. "Let's go!"

They strolled down the street, appreciating the warm spring air and the soft starlit sky. Sue's bus came rumbling down Monument Street and Sue swung aboard, waving to them through the window.

"See you soon! Good-bye!"

"Good-bye, Sue! Good luck!" they called.

The bus disappeared into Broadway and the girls, in silence, strolled up the street and into the Hospital entrance.

The corridors of the Hospital were very quiet. The bustling throng crowding halls during the day was absent and the girls' footsteps echoed as they walked to the Brady entrance. They spoke in low tones. The wards in

Brady were silent and the noise of the elevator door, as they opened it, resounded through the building.

"Queer when a hospital goes to bed," said Sara Jane, reflectively. "I couldn't imagine such silence, with all the activity that goes on during the daytime, could you?"

"Of course, only a small part of it has actually gone to bed," answered Mary. "There are probably people working in lots of labs; the nurses are on the wards and the interns are always here on call. Lots of nights there are emergency operations that get the whole surgical team up. And the Obstetrical Department! Aren't there more babies born at night than in daytime? I can't think of anyone I know who has had one who didn't have to rouse her doctor in the middle of the night!"

"Oh, Mary! You must be exaggerating! Some babies are born in the daytime! I see obstetricians in the halls often!"

"They are visiting babies already born," Mary insisted, stubbornly. "Karen, how do you open this door?"

The elevator had stopped at the sixth floor and they mounted the stairs to the laboratory. It seemed isolated and mysterious, in the half light.

Karen unlocked the door of the big lab and snapped the switch. A hundred white mice in fifty glass cages blinked at the light. A chorus of guinea pig squeals greeted the girls.

"Freddie must feed them at night," said Karen, laughing. "They are conditioned."

"That's what the girls say about treating ducks in ex-

periments," said Sara Jane. "They turn the lights on over the cages and the ducks commence eating. When the ducks have had the amount of food and drug that is necessary, off go the lights and the ducks go back to sleep. What a life! My goodness, Karen, you have certainly changed things around in the lab! You have so many more animals and so much more equipment than you had the last time I was here."

"And we are doing considerably more work, too," said Karen. "Clara is here, you know, and another girl is coming in a month. She will have the egg inoculations as her major activity. Dr. Johnson says there will be about seven dozen a week to be inoculated and cultured."

"Almost wholesale. One of the big pharmaceutical houses that is making a certain type of vaccine for the Army uses fifty thousand a week! Can you imagine that?" questioned Mary.

"What a lot of eggs!" declared Sara Jane. "We certainly need patriotic hens in this war, don't we?"

"It probably means fewer scrambled eggs and less fried chicken for humans," said Karen, ruefully. "Well, we can't complain. I read the other day of someone in France who hadn't seen a fresh egg in three months, and I'm sure that wasn't because they were being used for scientific purposes."

"Look at these cute mice!" cried Mary, investigating the animal cages. "They have had a whole loaf of bread and they have made themselves a house out of it. It is tunneled and there are windows and doors in it! They

must have had a wonderful time eating their way through!"

"They always make themselves houses," said Karen. "We have had only one crowd of them that didn't seem to be interested. I love to watch them working about busily in their cages. Their coats shine beautifully. They are a great help to us, in our studies, and we are genuinely attached to them. How about reading plates, Mary? Can I tear you away from the rodents?"

"To your tasks, women! I must to my book!" Sara Jane settled herself in the big chair.

"Let's tabulate the results of the last test, Mary," said Karen. "Here are the plates. I will read them and you check them in the notebook—about three pages from the end, I think. That's right."

Mary found the place and the girls worked steadily.

"The colonies on the plates are growing beautifully, Karen," said Mary, admiringly. "The growth on this set of plates is much heavier than on the control plates. I suppose the control plates contain a meat base, don't they?"

"Yes, that's the medium we have always used. Mary, it's the best growth I've seen. Isn't that exciting? Oh, I hope that it isn't a fluke. Let's do some more as a final check."

"Come look at Karen's plates, S.J.," said Mary. "Isn't this a beautiful growth?"

Sara Jane admired the glistening bacterial colonies on the chocolate brown medium, and then she said: "Tell you what, Karen. Write down for me exactly the way

you make it, and I can have some made in our department. We can see what results we have with it."

"That would be a help, Sara Jane," said Karen. "I have a complex about the thing now, and I'm scared to death to have anyone try it. If we could run the first experiment quietly, and with some success, I wouldn't mind Miss Johnson's asking some of the other labs to use it."

Karen typed her method for Sara Jane. The girls washed the glassware they had used and straightened the desks. Karen gave one final look around the lab before she turned out the light and locked the door.

"I hate the responsibility of closing up," she admitted. "I'm always afraid I haven't turned off the pilot lights on the Bunsen burners, or something equally stupid."

"Looks all right to me," said Sara Jane, placidly. "Let's go."

"Karen, when does Janet's new boss, the Lady Chemist, arrive?" questioned Mary, as they walked down the hall.

"In about a month, I think," answered Karen. "I had a brainstorm the other night. She comes after Sara Jane leaves. Why don't I write and ask her if she'd like living with us for a while?"

"What would we do if it didn't work?" asked Mary, doubtfully.

"What would you have done if I hadn't worked?" retorted Karen. "Seems to me that you are growing conservative suddenly."

"That's right," said Sara Jane. "Supposing Karen

hadn't 'worked'? Wouldn't that have been dreadful?"

"Well, I did 'work,' so you needn't begin worrying now, silly. There's no reason why we can't suggest this as a temporary arrangement—then if she seems to fit in —make her a permanent offer."

"Cagey, aren't you?" suggested Sara Jane. "Who's being conservative now?"

"You all make me sick. Let's stop for a coke."

"So you can't take it any more?"

With sundry jokes and jeers they strolled into the lunchroom.

"This is one phase of my life that I shall hate to part with," said Sara Jane, reflectively. "In no other clime shall I ever achieve such pleasure from the Hopkins drink."

"Let's each have another. Mary, you drink to the Air Force; Karen, you drink to the Medical Corps; and—I think I shall drink to the Marines!"

"S.J., what do you suppose you will do when you graduate?"

"I don't know yet, but I shall, soon. I'll probably find myself working on some exotic disease. Our men, fighting in the tropics, will become afflicted with one of the rare and mysterious maladies you read about in Oriental mystery stories. Maybe someone will send me a handsome Marine whose life I'll be able to save by discovering, lurking beneath his toenail, a parasite never before described. In honor of his indebtedness to me, he will return to the fray, capture one hundred thousand mem-

bers of the enemy forces, also afflicted with the malady, and bring them to me. Then I can do an epidemiologic study!" This speech was accompanied by gestures and intense dramatic expression.

"You will probably end up testing a municipal water supply," said Karen, laughing. "Let's go home and see what Chinky has done to his new residence."

Everything was quiet until Mary turned the key in the lock. Then Chinky let them know that he was glad to have them home. He had been, and continued to be, a model cat.

18

ROMANCE AND SARA JANE

Sara Jane was going to a party. Above the sound of the splashing of water in the tub could be heard her voice, raised in song.

"Oh, beautiful for spacious skies, For amber waves of grain!"

Janet, deep in the armchair and immersed in *Mademoiselle*, stirred.

"What's eating S.J.?" she asked. "Unusually vocal this evening, isn't she?"

"Sh-h-h," whispered Karen, dramatically. "We think it's THE MAN!"

"What?" demanded Janet, sitting up. "Really? No one ever tells me anything!"

"Oh, it can't be. He's only a sergeant," said Mary, loftily, as befitted the wife of an officer in the Air Corps.

"Don't be snooty. Sergeant or not, S.J. is certainly pleased with herself. Did you note, Madam, the careful manicuring and pedicuring going on a while back? The pedicuring might be chalked off to wear and tear from the School of Hygiene floors, but I've never seen S.J. apply nail polish before with the loving care that went into the procedure this evening, and neither have you!"

"Where did she meet him?" asked Janet.

"At a most conservative spot—a bridge table. Dr. Billings invited some of his students to his house night before last for a buffet supper. The Marine was also asked, as I understand, because he was Dr. Billings' nephew and staying with them during his leave. I reckon there was no way out of it," said Karen, with a grin at Mary. Mary tossed her head and made a face.

"I heard," added Mary, feeling that she had put Karen in her place, "that bridge was suggested, but no one was up to it, and they ended in—what's that game you play on an oilcloth cover with poker chips?"

"Tripoli?" suggested Janet.

"That's right. Well, the Marine took all the pennies away from the other guests, which impressed S.J. no end."

"Gambling, Mary? How shocking!"

That sent the three of them into a fit of giggles, and when Sara Jane emerged from the bathroom in an aura of bath powder and toilet water, she looked at them with great condescension.

"Children," she said, reprovingly, "what might be the cause of such hilarity? Hello, Janet! I never thought to see one of our dignified demeanor engaging in the gambols of my foolish roommates."

"Gambols?" queried Karen.

"Poker chips," declared Mary, decisively, and they were off again in helpless laughter.

Sara Jane looked at them in consternation. "I think

you are all idiots," she said. "Gambols? Poker chips? Oh-h-h-h." The light of understanding came into her face, and at the same time, flame. She turned with great dignity toward the bedroom door.

"Karen," she called a minute later, "may I borrow your white cape tonight? I think it might look better with this dress than mine."

"Certainly, S.J.," answered Karen, politely. Then, in a stage whisper to Janet, nodding significantly toward the other room, "Patient shows all the signs and symptoms of a common disease, doesn't she?"

"Very common," admitted Janet, "Marine or not. To think that the lofty Sara Jane would come to this! When is he coming for her? I have to go home, but I'd like to see the paragon."

"Stick around. I have to go over to get a reprint at the Hospital after while, but I wouldn't miss this for worlds. He's supposed to be here soon."

"You all wouldn't be sitting around to see my date, or anything like that?" called Sara Jane from the bedroom. "I told him I'd meet him on the corner. I hesitated to expose him to you vultures!"

"Sara Jane, you never did!" exclaimed Karen and Mary in chorus.

"Certainly got a rise that time!" Sara Jane walked serenely and with queenly beauty into the room; her hair hung in ringlets on her shoulders, framing a graciously smiling face. Her flame-colored dress accentuated the color in her cheeks and on her lips and nails.

"Sara Jane, you look lovely!" said Janet, enthusiastically.

"That's our roommate, Mary! We made her what she is today, and that's something! How about a little water analysis, oh student of Public Health?" inquired Karen, still teasing.

Sara Jane ignored her tormentor. "Now listen, girls," she said, "this little boy is shy! I don't want him mistreated by you harpies. You are all silly enough this evening to do anything. Be nice, won't you? I mean it!"

"Of course, we will be nice, idiot," replied Karen, her mood changing as she heard the seriousness in Sara Jane's voice.

Mary got up and kissed her lightly on the cheek. "I won't disturb your make-up," she said, "but you are so beautiful that I can't resist it. Here he comes! Go back into the bedroom. You can hear how nice we can be to your boy friend."

Steps were heard on the stairs and the doorbell rang. "Mary, you and Janet meet him—I'll go into the bathroom for a minute—there are too many of us for the first meeting!" whispered Karen, and she fled.

She heard a pleasant voice say: "Good evening! I'm looking for Miss Smith."

Then Mary's husky tones: "Do come in. Sara Jane! I'm Mary Wehr and this is Janet Stevens. Won't you sit down?"

"This is my cue," thought Karen. "S.J.'s entrance is going to be a wow!"

She opened the door, and the man, who had risen hastily at the sound, relaxed. Obviously this was not the girl he was waiting for.

Mary was saying: "Karen, may I present Sergeant Billings?"

Her first thought was: "Marine uniforms are snappier than either the Army or Navy ones. He looks awfully sweet—and he is shy! Wonder what the ribbon means?"

She acknowledged the introduction and the girls set about putting him at his ease. He was quite tall, slim, and erect. He had light hair, burned by wind and sun, and a tanned face that brought out the color of his blue eyes. He answered them politely, but his thoughts were clearly on another subject. The door of the bedroom opened and the subject entered.

Sara Jane was even lovelier than the girls had remembered, for there was a flush on her face and a radiance in her eyes that belied her cool serenity of a few minutes before. The Marine was so completely awed that he could only look at her.

A rush of sympathy for him came over Karen. "He's absolutely defenseless," she thought. And then, irrelevantly, "It's a good thing the enemy can't make him react like this. I wonder what his ribbon means. Could it be enlistment before Pearl Harbor?"

She heard Sara Jane's steady voice. "Hello, Jim," she said. "Shall we go?" Her words seemed to give them both more assurance, but the other girls realized that life had taken a turn for Sara Jane and her Marine.

Karen wrote Sue: "Sara Jane is certainly something in this condition. And to top it off, the Marine was not only at Guadalcanal, but has a citation for bravery and is going to Officers' Training School at Quantico! When she picked her warrior, she selected a good one!"

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CARRYING ON

"KAREN," said Dr. Johnson, the following day, "are you pleased with the results you are getting with your meat-free medium? I think it's time you reported it in one of the current journals. The medium may be useful. Can someone in one of the other labs check your results? It would be an interesting report for the next meeting of the local bacteriologists."

"Sara Jane gave the directions to Margaret Adams, Dr. Johnson. They are studying reactions of meningococcus strains in their lab and are carrying a few related organisms for comparison. It seemed to be a good place to try the medium. What with tests and mice and a few other little problems around here, I haven't inquired about the results of Margaret's platings, but I shall call right away."

"Good!" said Dr. Johnson. "Let me know when you hear. I am eager to know what she thought of Medium by Long!"

Miss O'Hara came into the lab a few minutes later and found Karen in a state of greatest dejection.

"What's the matter, Karen?" she asked in surprise.

"Oh, Miss O'Hara, I called Margaret to ask her what

results she had with my medium. She said she had tried it, twice. The first time, their sterilizer wasn't working properly and the whole lot was contaminated! The second time the medium looked all right, but the organisms wouldn't grow on it! Isn't that dreadful? What do you suppose can be the matter with it? Miss Johnson wants me to write the method for publication and we can't publish anything about it, if it doesn't work. What shall I do?"

"That's a shame, Karen, but don't be upset. You have a good medium and there may be some little flaw in Margaret's technique. It means, probably, that your directions aren't perfectly clear. What could be the matter with them? The medium is so simple to make that I shouldn't think anyone could go wrong," said Miss O'Hara, thoughtfully. "Do this, Karen. Take some of your plates over to Margaret and let her inoculate them with her strains of organisms. Then go over the directions with her and see if you can discover any possible misinterpretation. If that doesn't give you a key, you and Margaret will have to take a day off and make up a lot of the medium, together. Take your plates over, now, if you have time. I'm sure you will detect the error."

Still depressed, Karen set off for the other laboratory, carrying her plates. She had worked hard on her brain child and the fact that it was not a success in another's hands was a heavy blow.

She walked up the steps into the School of Hygiene. It seemed strange to see men in uniform wandering about

the corridors. Classes in scientific subjects were being held for soldiers, in the School of Hygiene as well as in the Hospital. All units of the University were at war.

She found Margaret peering into her microscope. She had worked in the laboratory for several years, but Karen had never known her well. She was a tall angular girl with fair skin and blond hair, worn in great braids about her head. She looked up and smiled.

"Hello, Karen. Nice to see you here. What's on your mind?"

"Hello, Margaret! I'm upset because your 'bugs' won't grow on the food I provided for them. I can't understand it, for they flourish on Brady Seven like the proverbial green bay tree."

"I'm terribly sorry, Karen, and I can't understand it, either. There isn't anything complicated about the directions, and if the medium gives your organisms good growth, it should do the same thing for my strains. I'm sure I've followed the directions carefully."

"Would you mind trying some of the plates I've poured? I will feel better if I know they behave as they should outside Brady."

"Of course, I'll try it," answered Margaret. She went to her work table and turned on her gas flame. "Your plates look beautiful, Karen."

"They look more beautiful when organisms are growing on them! Did you have much trouble neutralizing the medium? Ours runs pretty acid before we adjust it."

Margaret looked puzzled. "Do you know—" she be-

gan, and then, "Wait a minute!" She extracted her notebook from her desk and opened it to the directions for Karen's medium.

"Well, neither of us was any too bright," she said. "You say nothing in your directions about the necessity of adjusting the medium, and the thought never occurred to me. I blindly followed directions, which shows my lack of critical judgment. My sample of medium was probably too acid for the meningococcus."

Karen's face was radiant. "Oh, Margaret, I was stupid not to make myself clear on that point. The medium is quite acid when it is made! That must be the answer!"

"I'm sure it is, Karen. Let me try your plates, and I'll make up another lot of the medium. I'm sure we can get together."

Karen hurried back to Brady, greatly relieved. Perhaps the brain child wasn't a failure, after all.

Margaret called the following day. "Karen, it worked beautifully," she said. "My plates were as pretty as yours and both sets showed luxuriant growth! The results were as good as they possibly could be. Congratulations!"

Dr. Johnson was as delighted as Karen. "You are going to write your first scientific paper, Karen, and I am expecting a masterpiece. Keep it simple and clear. Don't forget that you must mention all the references you have used and be sure that your bibliography is correct. There is nothing worse than trying to check references and finding that the author has made a mistake in a volume or page number of the article he has referred to."

Karen stewed and stewed. It was a simple exposition, but as far as she was concerned, its preparation rivaled *Gone With the Wind*. Finally, the manuscript passed the approval of all of the members of the staff and off it went to be submitted for publication.

"The next speaker is Miss Karen Long. Her subject is *A meat-free medium for use in culturing Neisseria.* Miss Long!" The chairman smiled at her appreciatively as she came to the podium: tall, rather grave, and clad in her favorite blue. Her hair was longer than it had been a year before and she was a little heavier. The year had given her maturity: to her competence and poise had been added a keenness and awareness that was arresting. She seemed to have found her field and was expanding in it. Dr. Johnson and Miss O'Hara watched her with love and admiration.

As she faced the audience, a panorama of the events of this momentous year in Baltimore sped through her mind: college, her friends in the laboratory, Pearl Harbor, Mary's wedding, Joe in Australia, Jack in the South Pacific, her mother and Elsa in the WAVES, Sue in a field unit, and her own contribution to the war effort. Next week Sara Jane and Pete would get their degrees and would take up their burdens. They were all going to have to fight long and hard to make their world a happy one again.

The panorama fled, and with it any nervousness. In a clear steady voice, she read her paper.

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